2nd EDITION

MEDICAL TERMINOLOGY

The Best and Most Effective Way to Memorize, Pronounce and Understand Medical Terms

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DAVID ANDERSSON

Medical Terminology

The Best and Most Effective Way to Memorize, Pronounce and Understand Medical Terms

second edition

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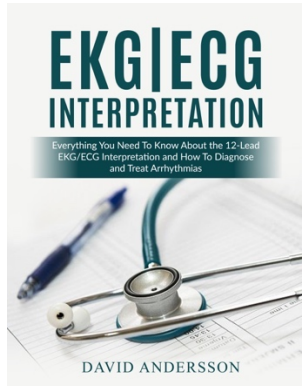
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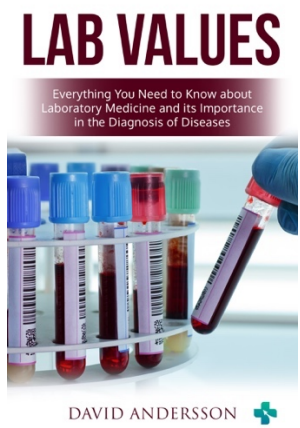
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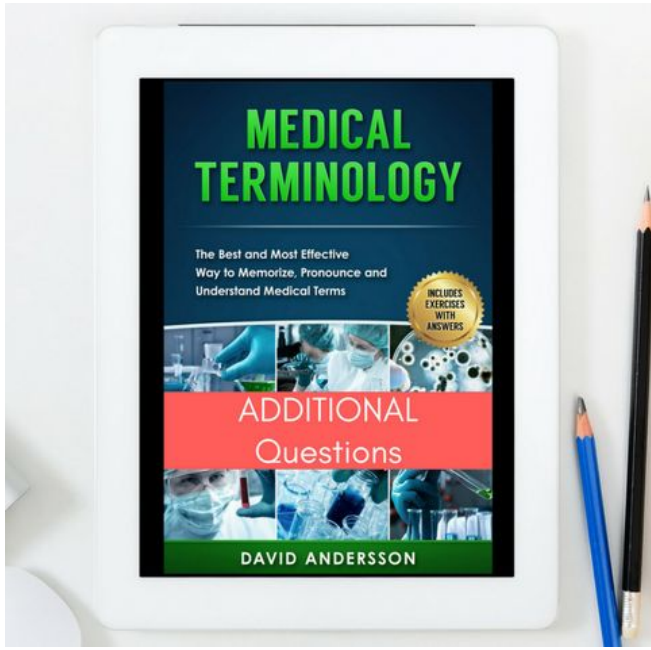

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Introduction

I want to thank you and congratulate you for downloading the ebook, *"Medical Terminology: The Best and Most Effective Way to Memorize, Pronounce and Understand Medical Terms"*.

What did the doctor say? What did the patient say? What did the professor say? What's going on?

These are only few of the questions that people ask when faced with jargon-filled medical conversation in hospitals, schools, clinics, homes, and even at work. This book contains proven steps and strategies on how to understand, pronounce, and memorize medical terms, by using various methods. It also has tips and strategies to help you apply these methods.

Thanks again for downloading this ebook, I hope you enjoy it!

Chapter 1: The Importance of Learning Medical Terms

Medical terminology is the language used by medical professionals worldwide. It is universal to the medical and healthcare industry as it helps providers to completely understand what help a patient needs, or what is happening to the patient. It is important for nurses, doctors, other medical professionals, and medical students to be familiar with this language. Nowadays, with new medical professionals entering the industry, such as medical coders or transcriptionists and medical billers, learning medical terms is even more important. There is a high risk of improper management due to miscommunication between medical workers and patients, which can occur if workers do not know or use the correct medical terms.

At home or in clinics, knowing the right medical terms can prevent confusion and panic. Individuals who are familiar with medical terms can better understand their doctor and other medical professionals, especially in cases where medical procedures are required. In schools or universities, a better knowledge of medical terms can help students pass their exams.

In hospitals and in the medical field in general, medical terms make clinical proceedings easier because medical professionals can understand each others jargon. This works better for the patient's benefit, as it allows every person involved in the process of care to carry out their duties more efficiently.

Doctors often use different medical terms interchangeably. Depending on the context and situation, the terms could have different definitions.

Medical terms accurately describe the treatment that patients need to undergo and the conditions that they suffer from. Without proper knowledge of terms, communication between medical professionals may get confusing and in the end, patients might not get proper treatment. This would show that medical professionals are no longer effective in their job. Understanding medical terms, using them properly, and knowing their context has its benefits.

A. **Benefits of Learning Medical Terms**

1. It avoids medical errors.

Not properly documenting patients' medical records can get medical professionals in trouble. It can even put patients at bigger health risks. Medical records contain details that can help medical professionals diagnose patients more accurately, and thereby provide them with the right treatment. These records are packed with medical terms that help describe medical history of patients. For example, a doctor can avoid using certain medication on a particular patient if it is known from the patient's medical records that the patient has had a history of adverse allergic reactions to those drugs.

According to two major studies by the National Academy of Medicine, there are 44,000 to 98,000 deaths each year due to medical errors. These medical errors can range from wrong-site surgery and surgical injuries, improper transfusions and adverse drug events, restraint-related injuries or death, mistaken patient identities, falls, pressure ulcers, burns, and suicides. Another medical error, medication error, has emerged within the past 15 years and it claims around 7,000 deaths each year.

If all medical professionals receive proper medical terminology training, these deaths can be avoided.

2. It provides easy documentation and standardized communication.

Most of the time, medical terms are represented by abbreviations, which are used in medical records for documentation. Abbreviations are used because, if medical terms are translated into laymen's terms, documentation can become laborious. Fortunately, medical terms are standard, and therefore, can be understood by all medical professionals, even when they are in abbreviations.

3. It provides accurate diagnosis.

Standardized medical terms also help medical professionals understand their patients' medical condition. This helps them interpret complex information, and enables them to diagnose patients more accurately. It basically helps them answer the following questions:

- Why is the patient seeking medical help?
- What kind of treatment and care is needed to help the patient?

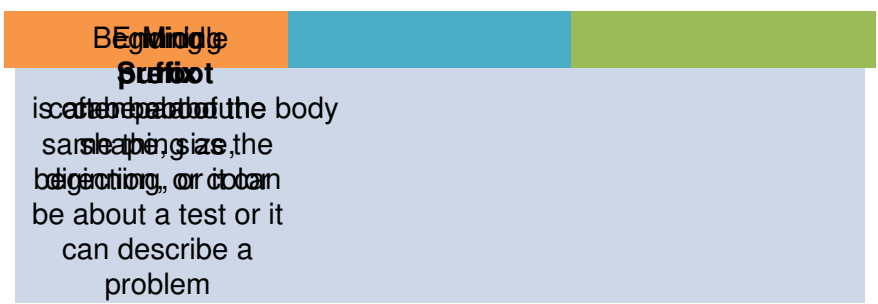
Being in, and studying for the medical industry has many benefits. It also has a lot of responsibilities and one of these is to learn, understand, and pronounce medical terms properly.

Chapter 2: Understanding Medical Terms

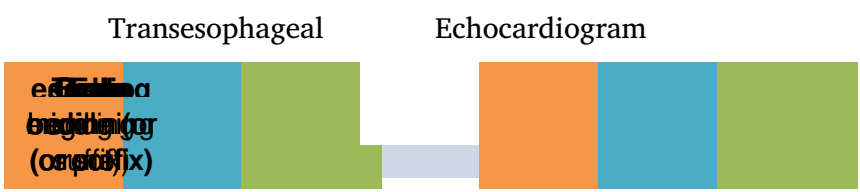
A. **Break Long Words Apart**

Medical terms may seem like a foreign language at first glance. The words are usually long and can be confusing. The key to understanding such terms is to focus on their components, specifically on their prefixes, roots, and suffixes. The list of medical terms is very long. Knowing the meaning of only a few components can help understand and interpret a long list of medical terms. Let's figure out how this is done.

Majority of medical terms are made up of multiple parts. Breaking them apart makes it easier to understand single, long words. Long medical words consist of the following components:


Beginning
Ending
Middle
Prefix
Root
Suffix
is often placed at the beginning, or it can be about a test or it can describe a problem
is often placed at the end of the word
is the part of the body
same thing, as the
shape, size,

A good example of a medical term to break apart is:

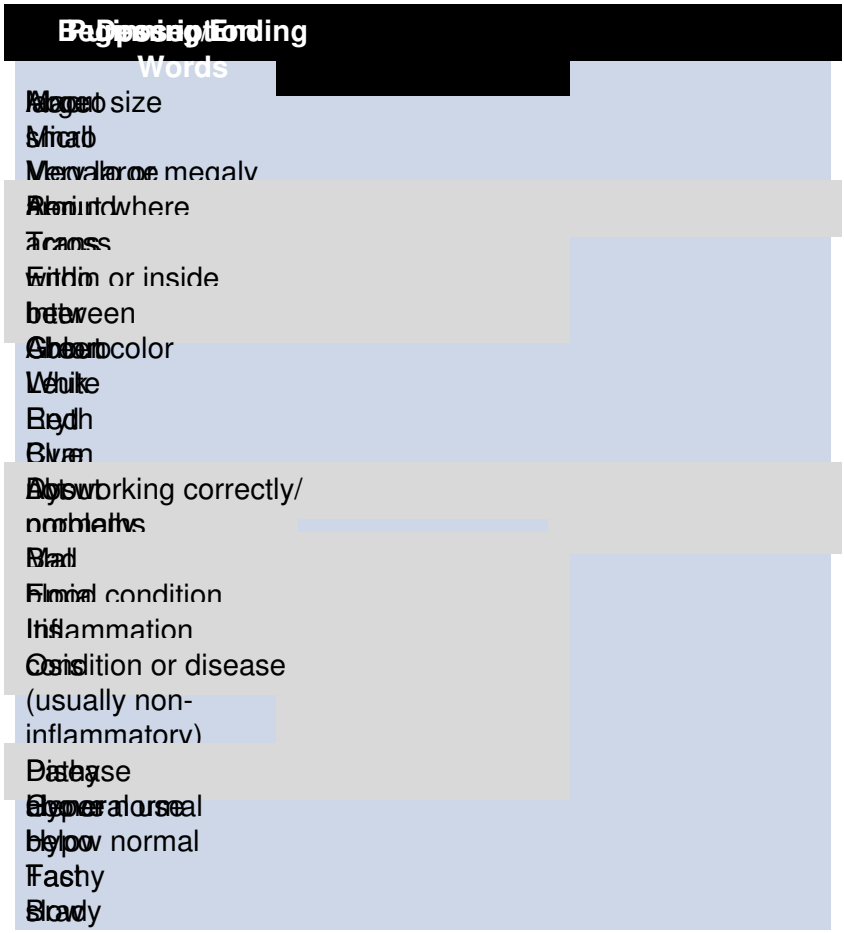


Medical terms do not necessarily have a beginning or ending. Sometimes parts of words appear in different components or places.

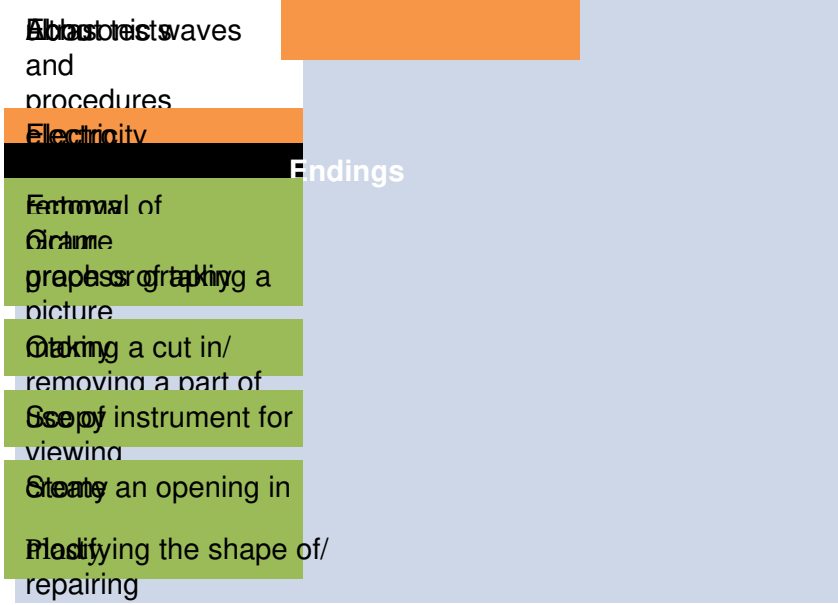
For example, the word cardio used in the example above, is also in the medical terms myocardial and cardiologist, though they appear in different places. Why and how this happens will be discussed in detail later.

A. **Be Familiarized with Beginnings and Endings**

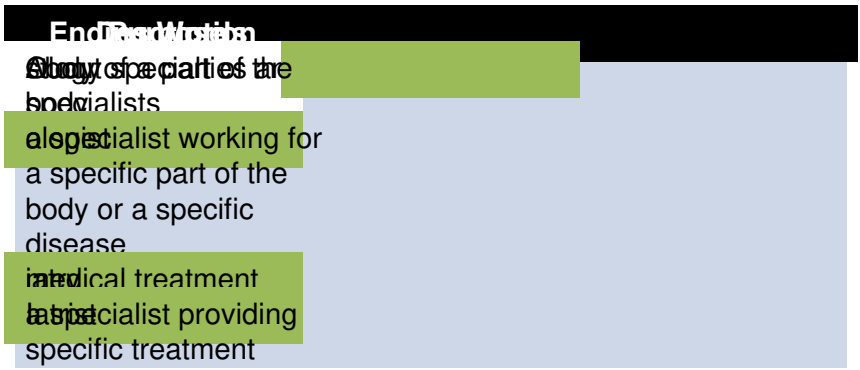
Beginnings and endings vary in purpose and use. Here are some of the most commonly used words for medical terms beginnings and endings:



Some of commonly used beginnings and endings about tests and procedures:



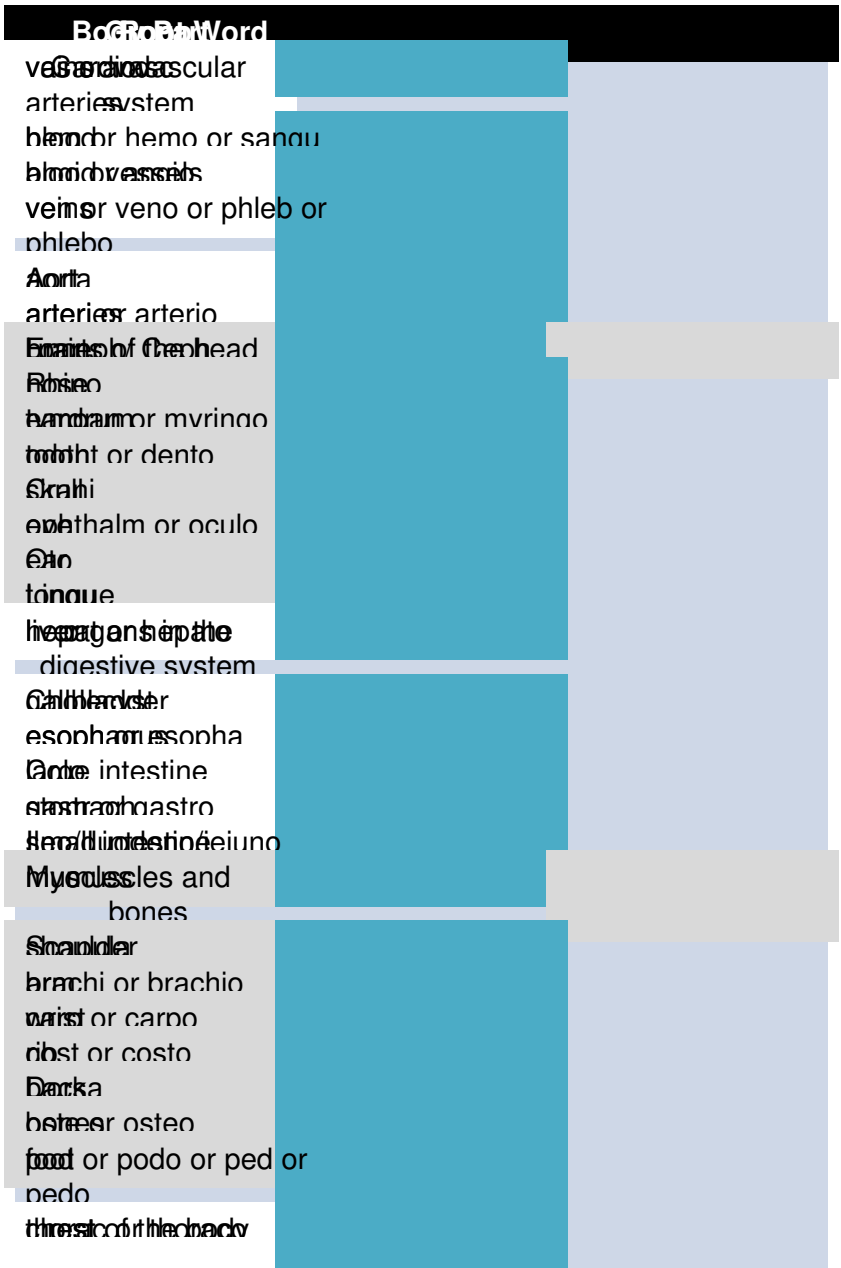
Some of commonly used endings about specialists and specialties:



Chapter 3: Root Words

Be Familiar with Root Words as Well

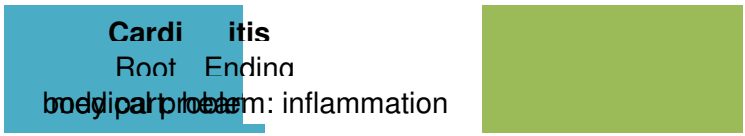
Usually, the root of a medical term is a body part. Using the example described in the previous chapter, cardio is the root of echocardiogram. It means heart. Here are some most commonly used word roots from the medical vocabulary:



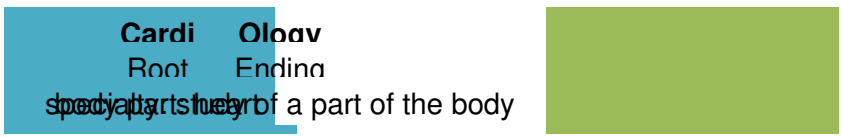
Tip: Group them into body parts, so it’s easier to remember.

Combine Beginnings, Roots, and Endings

Now let's see how to put those beginnings, roots, and endings together. Use the tables above as guides. Let's use the word cardio as an example.



Cardi + itis = inflammation of the heart

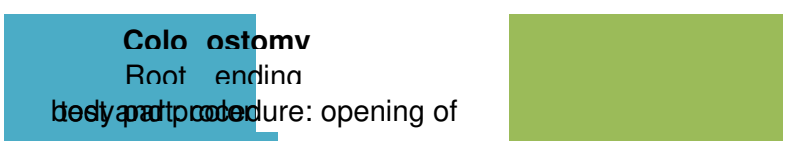


Cardi + ology = study of the heart

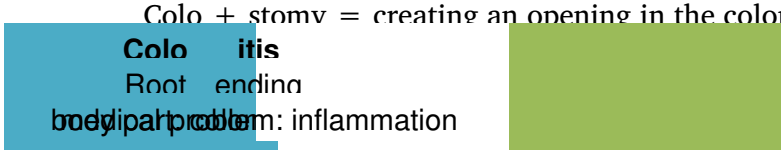
Cardio + myo + pathy = disease of the heart muscle

Echo + cardio + graphy = taking a picture of the heart using ultrasonic waves

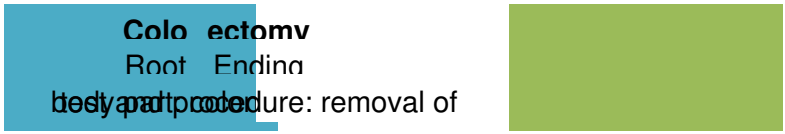
Another example is the word colo or colon.



Colo + stomy = creating an opening in the colon.



Colo + itis = inflammation of the colon



Colo + ectomy = removal of the colon

Going back to the first example, Transesophageal Echocardiogram, let's divide the words per set.

Set 1: Transesophageal

Trans + esophag + eal = going across the esophagus

Set 2: Echocardiogram

Echo + cardio + gram = recording a picture of the heart using ultrasonic waves

Therefore, Transesophageal + Echocardiogram = a procedure where a patient swallows a tube that goes across the esophagus to record a picture of the heart using ultrasonic waves.

It also helps to know whether the root word refers to an internal or an external part of the body.

External Root Words

In the following table, you'll find the most common root words concerning the **outer** part of the body and its functions.

Acr/Acro			
Adip/Adipo			
Axill/Axillo			
Blephar/Blepharo			
Brachi/Brachio			
Bucc/Buccal/Buccalo			
Canth/Canthal/Canthoto			

performed to reduce pressure in orbital compartment syndrome, or to gain access to the bony orbit.			
Capitate The capitate bone is located in the center of the wrist that is shaped like a rounded head.			
Carpoptosis A condition characterized by paralyzed extensor muscles of the hand and the fingers			
Caudal Caudal anesthesia is performed by injecting a local anesthetic agent into the lower end of the sacrum and coccyx (tail bone) This provides pain relief from the umbilical (navel) region and below.			
Cephalohematoma Cephalohematoma pertains to a traumatic, solidified clotting of blood that takes place beneath the inner skin of the newborn's head. It does not affect the brain cells, but it does bring about a pooling of blood from the injured blood vessels, which lie between			

	the baby's skull and the internal layers of the skin.		

Derma/ Dermo			
Dorsi/Dorsal			
Facio/Facial			
Gingivo			
Glosso			
Gnatho			
Inguino			

An **Inguin**al hernia occurs when the tissues of the intestines push through the base of the abdomen. It appears as a lump in the groin. It also reveals itself as an enlargement of the scrotum in males.			
Iris The iris of the eye			
Labia The skin folds of the vulva which serves as a protection to the opening of the vagina.			
Laparoscopy Laparo- Operation where a fiber-optic gadget is introduced via the abdominal wall, to allow the surgeon to see the organs within the abdomen This is often done to for diagnosis of abdominal diseases, or as part of a surgical procedure within the abdomen.			
Bilatero Bilateral means on both sides Hence, **Bilater**al micromastia refers to the underdevelopment of both parts of the body which are farthest from the			

where a plastic tube (**naso**gastric tube) is introduced via the nose, through the throat, and into the stomach, for assisted ventilation.			
Occipital bone **Occipital** bone located at the lower back area of the skull It contains the back portion of the brain.			
Oculogyric crisis **Oculogyric** crisis elevation of the visual gaze in both eyes An oculogyric crisis is an untoward reaction to medical disorders or pharmaceuticals which is manifested by a lengthy, uncontrollable, upward deviation of the person's eyes.			
Odontoma **Odontoma** associated with the development of the teeth It is brought about by the abnormal growth of normal dental tissue.			
Omphalocele **Omphalocele** **Omphalocele**			

Paronychia **Paronychia** is a pus-filled soft tissue infection involving the fingernails The chronic type of paronychia is usually caused by a fungal infection (Candidiasis).			
Ophthalmoscopy **Ophthalmo**scopy is a procedure where the eye doctor (**ophthalmo**logist) utilizes an **opthalmo**scope to view and check the inside of the eye			
Optometry **Optometry** is the assessment of vision by **Optico**/**Opto**metrists to evaluate vision and to determine whether glasses or contacts are required to fix a visual problem			
Oropharyngeal **Oro**pharyngeal refers to the mouth as well as the pharynx Hence, **Oro**pharyngeal dysphagia pertains to difficulty in swallowing due to abnormalities or malfunction not just in the throat but also in the mouth.			
Otitis media **Otitis media** is inflammation of the middle ear			

brought about by an infection (caused by either bacteria or a virus) spreading to the Eustachian tube			
Papillo **Papillo** **Papillo** Papillomatous			
Papilloma in the breast ducts which consists of mammary epithelium (cells which make up the breast's duct wall lining) They block the duct fully and have fronds that resemble fingers.			
Pelvis **Pelvis** **Pelvis** Pelvis of the renal pelvis			
Phallo **Phallo** **Phallo** Phalloplasty procedure performed to augment or to repair the penis			
Pilo **Pilo** **Pilo** Pilonidal Cyst used to denote a cyst which contains hair			
Podia **Podia** **Podia** Podiatry medicine which is dedicated to the treatment, both medical and surgical, of the foot and other parts of the lower extremities			
Rhino **Rhino** **Rhino** Rhinoplasty			

condition where the nasal cavity is persistently filled with substantial amounts of mucous fluid

Somato, **Soma**, **Somato** genic diseases refer to illnesses which originate from the parts of the body. These are the opposite of **psycho**genic diseases wherein the cause of the illness is of mental origin.

Stethoscope, **Stetho** placed against the chest, used for listening to the inner sounds of the body, so as to aid in diagnosis.

Stomatitis

Talocrural dislocation

Tarsalgia

individuals with flat feet.			

Internal Root Words

In the following table, you'll find the most common root words pertaining to the ***inner*** parts of the body and their functions.

Bronchial Asthma			
Bronchiolitis			
Carcinogen			

amounts, **carcino**genesis occurs. The latter refers to the development of cancer.			
Cardio refers to the heart. **Myopathy** is a condition which affects the muscles of the heart and causes diminishing of the force of cardiac contraction This effect reduces the cardiac output and efficiency of blood circulation.			
Cellulitis is an infection in the skin and in the underlying tissues caused by bacteria, often by streptococci, which gains access to the skin through a wound			
Cerebellar refers to the irregular, spasmodic, and involuntary movements brought about			

by diseases of the cerebellum or an injury to the cerebellum			
Cerebrovascular disease **Cerebrovascular accident** **Stroke** **Cerebral infarction** **Cerebral hemorrhage**			
Cholangiography **Cholecystography**			
Cholecystectomy **Gallbladder removal**			
Chloroma			

Colostomy A surgical procedure wherein part of the colon is taken out via an incision made in the wall of the abdomen An artificial opening is then made in this colon segment, which serves as an exit point of feces. The fecal matter will be eliminated into a bag affixed to the patient's skin.			
Colposcopy A diagnostic procedure where the cervix and the vagina are visually inspected through a magnifying device (**Colpo**scope) This is done as part of a screening procedure for cancer.			
Costochondritis Inflammation of the cartilage connecting the ribs to the sternum			
Costodynia Chest area pain caused by injury to one			

of the ribs			
Cryosurgery Cryosurgical procedure, where extremely low temperatures are utilized for the destruction of tissues Alternatively, the cold may be used to promote adhesion between a tool and the tissue.			
Cryptorchidism Cryptorchid Developmental disorder in newborn boys, characterized by failure of the testes to drop into the scrotum			
Subcutaneous Subcutaneous Beneath the skin; for example, a subcutaneous injection is given just below the skin.			
Cyanosis Cyanotic Discoloration, where the extremities of the face turn			

bluish, as a result of excessive amounts of deoxygenated hemoglobin in the blood Cyanosis of the lips is indicative of heart failure or chronic obstructive pulmonary disease.			
Cysticercosis Cyst/ Cyst Cysti			
A rare condition, where there is an infestation of parasitic cysts within the muscles and even in the brain This is brought about by the infestation of pork tapeworm.			
Cyto/Cyto Cytology			
Refers to the study of individual cells It is useful in medicine particularly when it comes to detecting anomalous, possibly malignant cells in cancer			

screening.			
Diplopia for double vision			
Duodeno Duodenum, which creates ambiguous gastrointestinal symptoms			
Encephalogram done to check for abnormalities in the brain's electrical activity It is done by tracking and recording brain wave patterns.			
Entero and the intestines, usually due to a viral or bacterial causative agent			
Episio of the vulva This usually is done after an **episio**tomy where the perineum and the posterior vaginal wall are cut by the obstetrician			

during the second phase of labor. Episiotomy is performed to ease the passage of the infant through a bigger opening, and to prevent irregular tearing of the vulva.			
Erythro Erythrocytes **Erythro** **Esophagitis** **Esophago** esophageal lining			
Fibrosis overgrowth, caused by the body's exaggerated healing mechanism as a response to an infection, a wound, or inflammation For instance, in the case of esophagitis, the thick scar tissue ends up narrowing the esophagus and causing difficulty in swallowing.			

Galacto			
Gastro			
Glyco			
Gyneco			
Hemato			

Galacto/orrhea excessive production of milk or milk-like discharge from the nipples
It can happen to non-pregnant women, menopausal women, men, and even babies. This is often the result of high levels of prolactin, a hormone that triggers the production of milk.

Gastro/tomy surgical procedure where an opening is created in the stomach, so that a feeding tube may be attached

Glyco/penia deficiency

Gyneco/logy medical practice which specifically deals with female reproductive health

Hemato/ma blood ,(often

solidified) brought about by bleeding from a vessel that has ruptured			
Hepat/ Hepato/ Hepatic			
Hetero			
Hydro			
Histo			
Homo			

homeo development **Homeo**, similar **homeo**			
hydro **Hydro** the space around the testes is filled with fluid This causes tender swelling in the scrotum and may be brought about by an injury sustained by the testes, by inflammation, or by tumors.			
hysterectomy **hysterectomy** of the uterus for a therapeutic cause			
iatro link to treatment Thus, an **iatro**genic anemia (low hemoglobin and hematocrit values) is the result of the recurrent removal of large volumes of blood. This could be because of repeated laboratory testing for			

diagnostic or monitoring purpose, or surgical blood loss. In such cases, the cure becomes the cause.			
jejunostomy (or jejunostomy tube)			
Keratomalacia (or keratomalacia)			
laryngitis (or laryngitis)			
leukemia (or leukemia)			

			leads to the incompetence of vital body organs such as the spleen, the brain, and the liver, once the abnormal cells infiltrate them

Melanocytes			
Melano			
Menorrhagia **Menstrual** **Menstruation** **Metro**			
Disproportionate menstrual bleeding			
Meningitis **Meningo**			
Inflammation of the meninges, with a bacteria or a virus as the causative agent This fatal condition is accompanied by severe headaches, photosensitivity, and stiffening of the muscles.			
Menorrhagia **Metra/** **Metro**			
Bleeding from the uterus that is experienced between the woman's monthly periods			
Myalgia **Myo**			
Medical term for muscular pain			
Myelination **Myelo**			
Myelin tissue in the bone marrow This impairs the bone marrow's competence			

			in producing blood cells.
Myringoplasty			procedure where a hole in the eardrum is closed through tissue grafting
Neonate			baby, less than four months
Necrosis			tissue cells, when the supply of blood is not sufficient (ischemia), or as a result of an infection (such as in the case of tuberculosis) It can also be caused by damage brought about by extreme temperatures, or exposure to radiation or harmful chemicals.
Nephrocalcinosis			deposits in one or both kidneys

Oophorectomy			
Oophoro			
Oophoro			
Orchid/			
Orchido			
Orchio			
Osteo			
Ost			
Osteo			
Palat/o			
Palato			
Path			
Path/o			
Peritoneum			
Peritoneo			
Peritoneo			

Oophorectomy
Oophoro
Oophoro
Surgical removal of the ovaries, as a last resort treatment for ovarian cysts or ovarian cancer

Orchid/
Orchido
Orchio
Relating to the testes
Orchitis is accompanied by high temperature, severe pain, and swelling around the area
When this occurs post-puberty, it is commonly due to the mumps virus.

Osteo
Ost
Osteo
Relating to bone
Osteomyelitis is an infection of the bone and in the bone marrow

Palat/o
Palato
Palato
Relating to the roof of the mouth
Palatoplasty is surgical correction of a cleft palate

Path
Path/o
Pathology
The study of a disease, usually a microorganism

Peritoneum
Peritoneo
Peritoneo
Relating to the peritoneum
Peritonitis is inflammation of the peritoneum
This is usually brought about by entry of

bacteria and digestive fluids into the abdominal cavity, through a punctured stomach or intestinal wall.			
Pharmacodynamics What pertains to the way the body reacts to, synthesizes, and benefits from a pharmaceutical substance			
Pharyngitis Inflammation of the pharynx usually due to a viral or bacterial pathogen It can also be caused by irritants such as smoking, foreign objects, and ingested corrosive substances.			
Phlebitis Inflammation of a vein; usually occurs after injection of an irritant drug into the vein.			
Pharmacy The			

Phrenic supplies the diaphragm It is essential for breathing. When injured or removed, half of the diaphragm will be rendered paralyzed.			
Pleuro inflamed pleura (membranes which envelop the lungs) due to infections of the lung, pulmonary embolism, or cancer of the lung			
Pneumo air/ **Pneumothorax** condition in the pleural cavity (the gaps between the two pleura surrounding the lungs) This will eventually lead to lung collapse, because of pleural compression on the lungs.			
Poliomyelitis condition caused by a viral pathogen			

			The severe type tends to affect the brain (especially the nervous system's gray matter) and the spinal cord. When this happens, the disease becomes fatal.
			commonly accompanied by pain, bleeding, and pus. It occurs in conditions such as Crohn's disease and ulcerative colitis. It may also be caused by gonorrhea and other sexually transmitted infections.
			is an abnormally elevated blood pressure in the arteries which provide

infections			
Sarcoidosis Sarcoidosis Sarcoidosis			
Sarcoidosis is a inflammatory disease of unknown origin which affects tissues around the body, most frequently the skin, the liver, and the lymph nodes			
Septicaemia Septicaemia Septicaemia			
Septicaemia is a condition where there is fast propagation of bacteria which release toxins into the bloodstream This happens when the pathogen escapes from the local area of infection (eg. an abscess). This commonly affects individuals with poor immune systems, such as cancer patients, HIV patients, or those taking medications which			

suppress the immune system.			
Splenectomy Spleen			
Spondylosis Spondylo			
which the arch of the 5th lumbar vertebra is not made up of normal bone as it should be, but is instead composed of soft, fibrous tissue which is weak and susceptible to damage			
Tendon/ Tendo			
frequently due to an injury or excessive use			
Testicular Feminization Syndrome			
Complete Androgen Insensitivity Syndrome) In this case, the infants are born as girls with vaginal pouches sans uterus or any other female reproductive organs. A testes is			

	present in the abdomen or in the inguinal region. However, the body's tissues are unable to respond to testosterone which is responsible for the development of male sexual characteristics.		
Thermography	Thermography is the temperature patterns of the skin's surface are documented as images		
Thyroidectomy	Thyroidectomy is the thyroid hormone production in the body is less than normal		
Tonsillectomy	Tonsillectomy is conducted for removal of the tonsils		
Tracheostomy	Tracheostomy is done by creating an opening in the windpipe when the		

			person's upper airway is obstructed This way, a tube, sometimes connected to an oxygen supply or ventilator, can be inserted.
			into the eardrum, to avoid fluid buildup in the middle ear
			urine's physical characteristics, such as the color and the concentration
			wherein the tissues in the vagina's front wall are weakened, thus allowing the urethra to bulge back and down into the vagina
			from the bladder back

			to the kidneys In normal situations, the flow is from the kidney, through the ureters, and toward the bladder.
Visc/ Viscero			**Visceroptosis** (also called **visceral ptosis**) is a disease of the displacement of the internal organs within the abdomen
Xanth/ Xantho			**Xanthochromia** (also called **xanthochromia**) is a yellowish discoloration, which is indicative of the presence of bilirubin in the cerebrospinal fluid
Xer/ Xero			**Xerophthalmia** is a dry condition of the eyes, involving the cornea and the conjunctiva, caused by lack of vitamin A

Directional Root Words

The following are the most common directional terms that are encountered in medicine. In medical terminology, you'll notice that they're often joined together or affixed to another word (e.g. a body part), in order to denote a specific route. Every day, in the medical setting, they are used to specify an intravenous site, the particular location of an infection or an injury, or the direction towards which a patient must be moved.

➢ **Anterior** or **Ventral** means the front of the body or toward the front part of the human anatomy.

Hence, the **ante**cubital vein refers to a vein situated in the front part of the body, specifically in front of the elbow.

➢ **Posterior** and **Dorsal** are the opposite of ventral, since they refer to the rear part of the body or the direction toward the back of the human anatomy.

For instance, the **dorso**gluteal injection site is located in the buttocks, specifically in the upper outer quadrant of the gluteal muscles. An experienced medical practitioner finds it easy by dividing the cheek of the buttocks into four corresponding quadrants and then inserting the needle into the superior lateral region.

➢ **Superior** or **Cranial** means upper. It pertains to a position which is situated higher than or above a body part.

A surgically created connection between the flesh and the bladder is required for draining the urine of patients suffering from urinary tract obstructions. Therefore, a **supra**pubic catheter is inserted to the

bladder via a skin incision made slightly *above* the pubic bone.

➢ As mentioned previously, **Caudal** means tail. A synonymous directional word is **Inferior**. As a directional term, both mean lower. They pertain to a position which is situated lower than or below a body part.

The **inferior** vena cava, for instance, is a major vein which transports deoxygenated blood coming from the lower part of your body toward your heart's right atrium.

Likewise, when a doctor performs a cephalo**caudal** assessment, this means s/he assesses the patient from head to toe.

➢ As stated previously, Lateral means at the side or toward the side of the body. **Latero**collis, therefore, is the involuntary movement of the head from side to side. This is observed in patients with neck dystonia. Fittingly, **Antero**colis pertains to the abnormal forward movement of the head.

➢ Whereas lateral is used to describe a direction *away* from the middle of the body, the term **Medial** means the opposite. It pertains to the middle or going toward the center of the human anatomy.

If a patient is experiencing antero**medial** knee pain, then the front and center part of his knee is in pain.

- **Proximal**, when used to describe a limb, refers to the part which is nearest to the torso or to the joint.
- Conversely, **Distal** is used to refer to the site which is farthest from the torso or the joint.

When a pediatrician says that a child manifests normal **Proximo**distal development, he means to say that the motor skills in body parts which are closest to the torso develop earlier than the motor skills in body parts which are further (distal) from the trunk. In other words, the child will first learn how to wave his arms before learning how to paint pictures with his fingers.

- **Superficial** is used to refer to a position which is closest to the body's surface.
- On the other hand, **Deep** pertains to a position which is distant or away from the body's surface.

Example: The body's fascia serve as protective paddings. They work to decrease the fiction of muscular force.

The **Superficial** fascia makes up the layer below the skin.

However, the **Deep** fascia is found further within the body since it envelops the blood vessels, the nerves, and the bones.

Ready for a word-building activity now?

Word Building Exercise

Part 1 - Instruction: Choose the correct word part to fill in the blanks.

Define: Inflammation of the throat. Answer: _____
[fill in the blank]-itis
ot
tonsill
encephal
rhin
neur
laryng

Define: Specialist working with the nerves. Answer: _____
[fill in the blank]-ologist
cardi
ophthal
neur
gastr
mamm
colon

Define: the study of the bones. Answer: _____
[fill in the blank]-ology
odont
rhin
phleb
ot
cardi
oste

Define: a slow heartbeat. Answer: _____
brady-[fill in the blank]
derma
gastro
rhino
lacrima
cardia
oculo

Define: inflammation of the brain. Answer: _____
[fill in the blank]-itis
ot
hepa
gastr
encephal
tonsill
col

Define: inflammation of the area around the heart. Answer: _____
[fill in the blank]-card-[fill in the blank]
chloro
itis
micro
endo
oscopy
peri

Define: Disease of the nerves. Answer: _____
neuro-[fill in the blank]
megaly
scopy
logy
itis
gram
pathy

Define: A picture taken of the heart using electricity. Answer: _____
[fill in the blank]-cardio-[fill in the blank]
hyper
gram
ologist
echo
scope
electro

Define: too much cholesterol in the blood. Answer: _____
[fill in the blank]-cholesterol-[fill in the blank]
pathy
itis
exo
hyper

megalo
emia

Define: Inflammation of the nose. Answer: _____
[fill in the blank]-itis
gastro
ot
laryng
neph
hepat
rhin

***Part 2* – Instruction**: Choose the correct answer to the following questions:

What body system does osteoporosis affect? **Answer: _____**

heart

bone

eye

Which word does not belong? **Answer: _____**

hypersensitivity

hyperactivity

hypotension

Is Hepatitis inflammation of the liver? **Answer: _____**

true

false

Is Pericarditis inflammation of the kidney? **Answer: _____**

true

false

If a doctor wants to look at the colon of a patient, what is this

procedure called? **Answer: _____**

Microscopy

Mammography

Colonoscopy

Great job! Correct answers are in chapter 11.

Chapter 4: Pronouncing Medical Terms

Majority of medical terms are challenging to pronounce. In some cases, a letter might be pronounced differently in two ways. In others meanwhile, some letters are pronounced silently. Rules of pronunciation are not the same for every letter and word. However, learning the basic and most commonly used rules can help medical and non-medical people to pronounce similar medical terms. Featured here are some of the most commonly used medical terms and how to pronounce them.

A. **Sounds in Pronunciation**

1. Beginning with “j”, pronounced as: “j”
Example: **j**aundice

1. Beginning with “sk”, pronounced as: “sk”
Example: **sk**eletal

1. Beginning with “gy”, pronounced as: “guy”
Example: **gy**necologist

1. Beginning with “cho”, pronounced as: “k”
Example: **ch**olesterol

1. Beginning with “ce” or “ci”, pronounced as: “si”
Example: **ce**liac

1. Beginning with “gi” or “ge”, pronounced as: “j”
Example: **gi**ardiasis

1. Beginning with “kn”, pronounced as: “n”
Example: **kn**ock **kn**ees

1. Beginning with “cu” or “ca”, pronounced as: “k”
Example: **Cu**shing’s syndrome

1. Beginning with “x”, pronounced as: “z”
Example: **x**erophthalmia

1. Beginning with “psy”, pronounced as: “siy” with silent letter “p”
Example: **psy**chology

1. Beginning with “n” and is followed by a vowel, pronounced as: “n”

Example: **n**orovirus

1. Beginning with “ph”, pronounced as: “f”

Example: **ph**ysiotherapy

1. Beginning with “cy”, pronounced as: “s”

Conditions: if “cy” followed by “s”, it is pronounced as “see”
If “cy” followed by other letters, it is pronounced as “si”

Example: **cy**stoscopy, **cy**stocele vs. cytology

1. Beginning with “sch”, pronounced as: “sk”

Example: **sch**istosomiasis

1. Beginning with “pn”, pronounced as: “n” with silent “p”

Example: **pn**eumococcal

1. Beginning with “k” and is followed by a vowel, pronounced as: “k”

Example: **k**idney

1. Beginning with "g" and is followed by a consonant, pronounced as: “guh”

Example: **gr**anuloma

1. Beginning with "z", pronounced as: “z”

Example: **z**ika virus

1. Beginning with "sc", pronounced as: “sk”

Example: **sc**oliosis

1. Root word ending with “g”, followed by “e” or “i”, pronounced as: “j”

Example: laryn**ge**al

1. Medical term with “oe” or “ae”, pronounced as: “e”

Example: oligomenorrh**oe**a

1. Beginning with “thy” or “ty”, pronounced as: “thi” or “ti”

Example: **thy**roid, **ty**phoid (except in typhus which is pronounced as “tee-foos”)

1. Ending with “thy”, pronounced as: pronounced as soft “thee”

Example: trime**thy**laminuria

For medical professionals, part of voicing their knowledge is to pronounce medical terms correctly. This ensures proper communication with other medical team members, providing successful medical care for patients.

A. **Sound Exercise**

Instruction: Choose the correct sound of the highlighted letters.

1. Laryngectomy. **Answer: ___**

g
j
guh

1. Gynaecomastia. **Answer: ___**

guh
guy
juy

1. Gingivitis. **Answer: ___**

juh
chu
j

1. Phimosis. **Answer: ___**

chi
p
f

1. Koilonychia. **Answer: ___**

ch
k
c

1. Scleroderma. **Answer: ___**

sh
ch
sk

1. Encopresis. **Answer: ___**

ch
k
s

1. Typhus. **Answer: ___**

s
ch
f

1. Oesophageal. **Answer: ___**

a
o
e

1. Neurone. **Answer: ___**

new
nu
ne

1. Anaemia. **Answer: ___**

o
a
e

1. Homocystinuria. **Answer: ___**

see
si
se

1. Mastocytosis. **Answer: ___**

si
say
see

1. Encephalitis. **Answer: ___**

ch
f
s

1. Neuropathy. **Answer: ___**

thee
thi
thy

Good job! Answers are in chapter 11.

Chapter 5: Memorizing Medical Terms

Using different learning methods and tools can help memorizing medical terms easier. Given below are the most commonly used methods for memorizing medical terms quickly and easily:

A. Using Flashcards and Phone Apps

1. Word Flashcards

For visual learners, flashcards are a great option for memorizing. It allows learners to associate medical terms with visual cues, and helps them to connect and commit such terms to memory. It also provides a cheap alternative, especially to students who are always on a tight budget. Flashcards are cheap to make. They can be made at home using board paper and a pen or marker. They are the most inexpensive study aids that students can rely on.

Apart from being affordable, the process of making flashcards at home can help learners to rewrite medical terms repetitively. This can help them to remember medical terms more easily, thus making it easy to memorize words that they've learned.

For learners who are too busy to create flashcards at home, there are always ones that are available online, or in bookstores that are professionally made. What's more, pre-made flashcards often have images in them that can help learners to memorize medical terms visually.

1. Phone Apps

Another visual option is by using apps that are readily available on mobile devices and smart phones. By using phone apps, there is no need to carry books or flashcards all the time. This is a good option for learners who are always travelling.

There are many apps that can help learners to memorize medical terms, but only a few are reliable. Given below are a number of Android and iOS apps that are helpful in memorizing medical terms:

For Android Phones

- App name: Med Term Scramble

Developer: Pearson Education
It is played like Scramble, but it uses only medical terms. It features more than 30 different lists or words. An iOS version is also available.

- App name: Learn Medical Terminology

Developer: MedTerminologyForCare UK
This app features interactive e-learning courses and medical terms exercises. There are also lists of prefixes, roots and suffixes to discover – all for free.

- App name: Medical Terminology Quiz

Developer: Quetzal Inc.
This app features a multiple choice quiz on twelve different topics discussing the anatomy of the human body.

- App name: Medical Terms EN

Developer: Tech IndiaNa Pvt. Ltd.
This app features commonly used medical terms, including diseases, symptoms, and tests. It also has a voice-enabled search, word completion, and other smart options.

- App name: Medical Terminologies

Developer: Medical Group Soft
This app is a simple, but comprehensive dictionary of medical terms. It also works when offline.

- App name: Medical Terminology Flashcards

Developer: Simple Tree LLC
While it has pre-made flashcards, it also allows users to create their own cards. It features a progress tracker.

For iOS Phones

- App name: Medical Terminology and Abbreviations

Developer: Air Capital Media LLC
It features a list of prefixes, abbreviations, and suffixes to help learners understand and memorize complicated medical words.

- App name: Eponyms (for students)

Developer: Ossus GmbH
This app features a short description of medical eponyms including more than 1,700 common and complex medical terms.

- App name: MCAT Flashcards – Kaplan National Practice Test

Developer: Kaplan
This app allows users to create flashcards choosing from 200 topics ranging from organic chemistry, general chemistry, physics, and biology.

- App name: Taber's Medical Dictionary

Developer: Unbound Medicine, Inc.
This app features more than 65,000 medical terms with 1,200 photos. It also has 100+ videos and 32,000 audio.

- App name: Med Term Scramble

Developer: Pearson Education
This app, also mentioned earlier, is available on Android phones as well.

- App name: Psych Terms

Developer: Michael Quach
This app is a medical dictionary for terms related to psychiatry, psychology, and other mental health issues.

A. **Using Visual Reminders**

This applies not only when memorizing medical terms, but to all words as well. Using images to associate with words can help learners memorize terms effectively. Using images to represent medical terms can act as cues when trying to remember words. This works because the human brain is designed to save and remember images as information. For example, by saying the word baby, the mind visualizes an infant instead of spelling out the word itself.

A. **Rewriting Medical Terms**

With repetition, the memory process speeds up; that's why rewriting medical terms can improve memorization of those words, especially if done by hand. Typing words on a computer or a smart phone doesn't produce the same effect. Also, rewriting study notes can improve understanding of medical terms, making it easier to study them.

Tip: Writing medical terms and their definitions 5 to 10 times

produces the best results.

Chapter 6: Prefixes and Suffixes

Learning Prefix, Root, and Suffix

As mentioned, the easiest way to understand medical terms is to learn their parts: the beginning (prefix), middle (root), and ending (suffix). It is also the smartest way to memorize medical terms because almost all medical terms include all these three parts. Most importantly, almost all medical terms are based on a root word which is the core of a word, carrying its meaning.

1. Prefix – the Beginning

The prefix is a group of letters or a single letter, set before a word to change its meaning. For example, the word "unable" has a root word of able. When the prefix "un" is added, the meaning changes from being capable to being not capable. In the medical field, a prefix is a word added before a root word to provide additional information about the time involved, location of an organ, or number of parts.

1. Suffix – the Ending

The suffix is a group of letters or a single letter set after a word to also change its meaning. For example, the word "useful" has a root word of use. When "ful" was added at the end, its meaning became different. From being an act, it became as something that describes value. In the medical field, a suffix is a word added after a root word to include a procedure, disease, or condition.

1. Root Word – the Middle

The root word is sometimes in the middle or at the beginning of medical terms. The easiest way to memorize root words is by learning its Latin or Greek meaning. There is no need to learn long words as long as the root words are kept in mind. So, it's better to focus on root words instead. For a guide on basic medical root words, please refer to Chapter 2.

1. Word Combinations

Sometimes, medical terms may contain more than one root word. For

example, there are 2 root words in the medical term “bronchogenic”: “bronch” and “gen”. The letter “o” was added to make pronunciation easier, while the suffix “ic” was added at the end.

Also, medical terms can be formed using a number of combinations:
prefix + root + suffix
root + suffix
prefix + root

Merely by learning prefixes, suffixes, and root words only, learners can already have vast knowledge of medical terms, making it easier to memorize such words.

The Most Important Prefixes

Given below is a table of the most indispensable prefixes in the medical field, accompanied by their meanings, and examples of their applications.

Prefix	Meaning of the Prefix	Example	Meaning of the Example
a-	Absence, lack, not	Apnea	Absence of breathing, not breathing
an-	Absence, lack, not	Anesthesia	Absence of sensation without
Albin-	Condition where the affected individual has an abnormally white complexion, due to lack of melanin pigment in the skin as well as in the eyes and the hair	Albinism	
Auto-	Self, destructive	Autolysis	Self-destructive mechanism of cells in which the cells are destroyed by their own enzymes
Bi-	Possessing dual nature, twice	Bicuspid	Possessing dual cusps, which is seen in premolar teeth
Cong-	Complete, heart disease	Congenital heart disease	Heart disease disrupt the normal mechanisms of the heart
Deplet-	Depletion, lack of substance used	Depletion	Lack of substance used

for hair removal; typically used in cases of hirsutism (excessive and abnormal hair growth on the face and the body)			
Dislocation, or luxation, occurs when a bone or cartilage is displaced from its normal position			
Ectopic pregnancy, also known as extrauterine pregnancy, is a pregnancy in which the embryo develops outside the uterus such as in an ectopic pregnancy			
Hemiplegia is a condition in which one half of the body is paralyzed			
Hypersomnolence, also known as excessive sleepiness, excessive somnolence, or excessive daytime sleepiness, is a condition characterized by excessive drowsiness in the daytime, or exaggerated, extended nighttime sleep			
Hypospadias is a birth defect in which the urethral opening is situated on the penis's underside			
Idiosyncrasy is an individualized sensitivity to the effects of a pharmaceutical substance			

Intravenous	Inside, into a vein/ inserted into a vein		
Mammoplasty	Mammoplasty of the breasts		
Microaspiration	Microaspiration aspiration of tiny amounts of refluxed gastric content into the lungs		
Postprandial	Postprandial after, located behind		
Preprandial	Preprandial before, situated in front of Thus, preprandial glucose level pertains to your glucose level before you eat.		
Semiconscious	Semiconscious only partially cognizant of his surroundings		
Syndrome	Syndrome a cluster of symptoms are linked by a single causative agent		
Transorbital	Transorbital through side to side, through the eye socket		
Ultrasound	Ultrasound waves that travel at an extremely high frequency (vibrations that are higher than 20,000 per second)		

Medical Antonyms

It is easy to decode the definition of a medical term if you know how to spot the prefix. Prefixes like Hyper and Dys are so common in everyday language, that once you get to identify them in medical terms, the convoluted term tends to seem less daunting.

Another useful trick to avoid confusion is to keep your eyes peeled for negative counterparts. Some medical terms may have the same root words and may initially look or sound the same. However, a change in a letter here or there can completely transform the meaning of the word.

Term	**Definition of the Term**		
Example	**Example**		
Abduction	Abduction is a movement away from the body's midline		
Adduction	Adduction is a movement toward the body's midline		
Biopsy	Biopsy is a tissue obtained from a living body is examined to determine the existence, the cause, or the severity of an illness		
Necropsy	Necropsy is a pathologist examines a dead body to determine the deceased's cause of death		
Bradypnea	Bradypnea is a slow breathing, usually under 12 breaths per minute		

Tachypnea	Rapid breathing, more than 25 breaths per minute		
Endogenous depression	Depression caused by internal factors, not caused by external factors		
Exogenous depression	Depression caused by a negative factor outside the body (eg: the environment, other people, events)		
Euthymia	Mood that is normal and rationally positive		
Dysthymia	Mood disorder that is persistent, type of depression		
Hyperplasia	Abnormal increase in the amount of an organ or tissue caused by an increase in the reproduction rate of its cells.		
Hypoplasia	Underdevelopment or incomplete development of a tissue or organ It refers to an insufficient or below-normal number of cells.		
Retrograde amnesia	Memory loss where the person can no longer access events that happened in the past, specifically ones before the occurrence of injury		

or disease			
Anterograde amnesia	Inability of the affected individual to form new memories following the event which caused the memory loss		

Medical Synonyms

In the medical language, there is a tendency for several words to have the same meaning. Part of the reason is because a huge chunk of medical terms, including prefixes, were derived from Greek and Latin tongues. Hence, it's possible for a modern medical prefix to have both a Greek version and a Latin version which may be used by healthcare professionals interchangeably.

Take a look at the following identical prefixes in their Greek and Latin forms.

Body part		
Kidney **Nephro** **Nephrolithiasis** the formation of kidney stones		
Umbilico **Omphalo** **Omphaloplasty** surgical procedure to repair or augment the belly button		
Tooth **Odonto** **Odontoblast** cells found in the tooth that manufacture dentin		
Breast **Mammo/ Mastecto** **Mammoplasty** surgical procedure to augment the breast/s		

More Synonymous Prefixes

Words meaning bad, faulty, difficult, or painful
Dys

Dyspepsia ineffective digestion
Mal **Mal**absorption inability of the small intestinal lining to absorb essential nutrients

Words meaning against
Anti **Anti**dote a substance which works by contradicting the action of a toxic substance
Contra **Contra**ceptive a device or a drug which acts against the normal mechanisms which lead to conception

Words meaning dual/ both
Ambi **Ambi**dexterity the ability of a person to carry out manual tasks with either hand with equal competence
Bi **Bi**fid uvula two clefts in the uvula
Di **Di**gastric muscle muscle under the jaw consisting of two bellies

Words meaning above
Epi **Epi**gastric situated above the stomach
Super **Super**ciliary bony prominence above the sockets of the eyes/ pertaining

to the eyebrow
Supra **Supra**sternal situated above the sternum

Words meaning under
Infra **Infra**patellar below the knee
Hypo **Hypo**glossal below the tongue
Sub **Sub**lingual below the tongue

Prefixes Pertaining to Position and Direction

Prefix	**Meaning of the Prefix**	**Example**	**Definition of the Example**
Circum-	around	Circumcision	A surgical procedure wherein the foreskin concealing the tip of the penis is removed A circumferential incision is made around the penis's tip. While often done for hygienic or religious reasons, it may also be performed as a treatment for balanitis, which is the inflammation of the head of the penis.
Dia-	through	Diathermy	A procedure wherein heat is produced in the body through high frequency electric current. It may be done as a treatment for ischemia to boost blood flow to the area. It may also be performed to alleviate pain that originates deep in the body.

Intubation wherein a tube is inserted into a body cavity or an anatomical part			
Interstitial a body part or cells, such as in the case of **inter**stitial fluid			
Intravascular contained within blood vessels It consists primarily of serum, in which blood cells are suspended.			
Intra-arterial situated just before the area of anastomosis			
Intradermal middle layer of the skin			
Paracervical beyond, two similar parts			
Periauricular ear			
Preoperative before, situated in front of			
Prophylactic beforehand It pertains to a scientific estimate of the most			

probable outcome of a disease.			
Regurgitation may be used to describe the backward flow of undigested food matter back into the esophagus or the mouth It may also be used to describe the backflow of other fluids, including blood.			
Epistaxis is the medical term for a nosebleed, or bleeding from the nose.			

Prefixes for Numbers and Measurements

Prefix	Meaning of the Prefix	Example	Example
Deci	One tenth of a 'bel' It is a unit used to express the relative intensity of sound.		
Kilo	A thousand	Kilogram is a unit of mass, equivalent to a thousand grams	
Milli	One thousandth	Millimole is one thousandth of a mole	
Mono	One	Monocyte is a cell with one nucleus	
Nulli	None	Nullipara is a female who has had no children	
Primi	First	Primigravida is a female on her first pregnancy	
Quadri	Four	Quadriplegia is a condition where all four extremities are paralyzed	
Semi	Half	Semicircular means half encircling, as in the case of the **semi**circular canal These are bony spaces in the inner ear that are filled with fluid. They are crucial in maintaining balance and in providing the brain	

with facts about orientation.			
Tetracyclic antidepressant drugs which have four fused atom rings in their skeletal formulas Includes Mirtazapine and Mianserin			
Tricyclic antidepressant drugs which have three atom rings in their chemical structures Includes Amitriptyline and Doxepin			
Unicellular a cell with one nucleus			

Note: Some measurement prefixes do not pertain to a specific number. Rather, they are used as comparative accessories to distinguish the abnormal from the normal.

An example of such prefix is **Poly** like in **Poly**dipsia. This is an unusually great and insatiable thirst experienced as a symptom of a disease (eg: Diabetes)

The Most Important Suffixes

Below is a table of the most indispensable suffixes in the medical field accompanied by their meanings and examples of their applications.

Suffix	Meaning of the Suffix	Example	Definition of the Example
-cyte	cell	erythrocyte	red blood cell
-phagia -phagy -phagic -phagous -phagosis	eating, swallowing, devouring	dysphagia aerophagia phagocytosis	difficulty in swallowing the act of swallowing air the process wherein a cell envelops and swallows up (phago) a particle like a microorganism, a foreign substance, or an old blood cell This is part of the normal immune function of the body.
-iasis -osis	abnormal condition condition, process	psoriasis cirrhosis	a skin disease a liver disease
-ic -ical -ous	pertaining to	endemic endocrinology cortical	a disease that is native to a certain region the study of the endocrine glands pertaining to the cortex
-ism	condition, state, process	pauperism alcoholism	the state of being poor addiction to alcohol
-ist	one who	dentist cardiologist	one who practices dentistry one who specializes in the study of the heart
-itis	inflammation	arthritis dermatitis	inflammation of the joints inflammation of the skin
-ize	to make, to become	sterilize vaporize	to make sterile to become vapor
-logy	study of, science of	cardiology pathology	the study of the heart the study of disease
-oma	tumor, mass	carcinoma lymphoma	a cancerous tumor a tumor of the lymphatic system
-pathy	disease	neuropathy psychopathy	disease of the nervous system mental disease
-plasty	surgical repair	rhinoplasty angioplasty	surgical repair of the nose surgical repair of a blood vessel
-rrhea	flow, discharge	diarrhea rhinorrhea	abnormal discharge of watery stool discharge of mucus from the nose
-scopy	examination, viewing	endoscopy colposcopy	examination of the inside of a body cavity examination of the vagina
-tomy	cutting, incision	appendectomy tracheotomy	surgical removal of the appendix surgical incision into the trachea

bronchi to constrict			
Stasis remaining in a state of low flow	**Stasis** remaining in a state of low flow	**Stasis** remaining in a state of low flow	**Stasis** remaining in a state of low flow
Stenosis narrowing of an anatomical passage	**Stenosis** narrowing of an anatomical passage	**Stenosis** narrowing of an anatomical passage	**Stenosis** narrowing of an anatomical passage
Digestion breaking food down mechanically and with the aid of enzymes, to convert them into substances that are beneficial to the body	**Digestion** breaking food down mechanically and with the aid of enzymes, to convert them into substances that are beneficial to the body	**Digestion** breaking food down mechanically and with the aid of enzymes, to convert them into substances that are beneficial to the body	**Digestion** breaking food down mechanically and with the aid of enzymes, to convert them into substances that are beneficial to the body
Toxic relating to something which is poisonous to the blood	**Toxic** relating to something which is poisonous to the blood	**Toxic** relating to something which is poisonous to the blood	**Toxic** relating to something which is poisonous to the blood
Urinalysis the analysis of the state of the urine	**Urinalysis** the analysis of the state of the urine	**Urinalysis** the analysis of the state of the urine	**Urinalysis** the analysis of the state of the urine
Palpation the examination of the body by touch, usually by the fingers and hands	**Palpation** the examination of the body by touch, usually by the fingers and hands	**Palpation** the examination of the body by touch, usually by the fingers and hands	**Palpation** the examination of the body by touch, usually by the fingers and hands
Varicose veins a former condition, the latter is a	**Varicose veins** a former condition, the latter is a	**Varicose veins** a former condition, the latter is a	**Varicose veins** a former condition, the latter is a

sometimes	to refer to the negatives	between two or more of the digits

Suffixes for Surgical and Diagnostic Procedures

Suffix	Definition	Example	Example
-centesis	surgical puncture to remove fluid	paracentesis: surgical removal of fluid from the abdominal cavity	thoracentesis: surgical removal of fluid from the thoracic cavity
-clasis	destructive procedure, a bone is intentionally fractured by the surgeon in order to repair a deformity.	osteoclasis: surgical fracture of a bone	
-desis	procedure, a joint is immobilized after its surface is fused with that of an adjacent bone.	arthrodesis: surgical immobilization of a joint	
-ectomy	surgical removal of a diseased or toxic tissue, an organ, or an anatomical part	hysterectomy: surgical removal of the uterus	thyroidectomy: surgical removal of the thyroid gland
-graphy	procedure by X-ray, CT, or other means after the introduction of a radiopaque substance	angiography: X-ray of blood vessels, and images are recorded	arthrography: X-ray of a joint
-gram		angiogram: X-ray of blood vessels	arthrogram: X-ray of a joint

therapeutic or cosmetic purposes			
Nephropexy technique wherein a detached kidney is kept in place by stitching it into the posterior abdominal wall It is also a term used for repair of an injured kidney.			
Otoscope instrument designed to allow visual examination of an anatomical cavity or an organ of the body			
Rhinoscopy process of assessing a patient's nose by inserting the rhinoscope, a tube with light and a lens, directly into the patient's nasal cavity			
Sigmoidostomy surgical procedure establishing a (opening) via the sigmoid colon			
Phlebotomy using a needle for gaining access into a vein This is for the purpose of			

drawing blood.

Suffixes for Pathological Conditions

Suffix	Definition	Example	Example Definition
-algia	pain	Arthralgia	pain for joint pain
-asthenia	weakness	Myasthenia gravis	an autoimmune neuromuscular disorder which is manifested by an unpredictable degree of weakness of the body's voluntary muscles
-cele	herniation of the bladder into the weakened wall of the vagina	Cystocele	herniation of the bladder into the weakened wall of a body organ
-dynia	pain	Cystodynia	pain
-ectasia	dilated	Phlebectasia	dilated veins due to blockage in the local lymphatic drainage)
-edema	swelling that occurs within the tissues due to excessive fluid buildup	Pedal edema	swelling that occurs within the tissues due to excessive fluid buildup accumulates in the tissues of the body, or in a body cavity

Pyrexia	Fever		
Emesis	The forceful ejection of contents of the stomach through the mouth		
Anemia	A medical condition characterized by reduction in red blood cell or hemoglobin deficiency The affected individual suffers from pallor and fatigue.		
Insomnia	A medical condition wherein the affected individual is unable to sleep		
Elephantiasis	A medical condition which is characterized by severe swelling of the extremities The causative agent is the filarial worm which may be transferred between human beings via a female mosquito bite. The parasite develops into a grown worm, which dwells in the affected individual's lymphatic system.		
Priapism	A painful medical condition in which a penile erection, that occurs even without external and psychological stimulation		

Retinoblastoma			
of malignancy, where immature cells rapidly develop in the retina This is occurs in young children, and is caused by gene mutation in the chromosomes.			
Halitosis			
Halitosis is a condition where bad breath, odour or taste, often an unpleasant symptom of a clinical condition			
Retinopathy			
Retinopathy is the term for more diseases of the peripheral nervous system that are dysfunctional, causing the affected individual to become weak or numb			
Neutropenia			
Neutropenia is a decrease in the number of granulocytes The latter are white blood cells which are essential in the immune functions of the body. They contain granules, which are actually microscopic pouches, which carry enzymes that digest microbes.			
Photophobia			
Photophobia is sensitivity to light which may be caused by a headache or migraine			

Grammatical Suffixes

➢ There are some medical suffixes which, when attached to a root word, form an adjective. Some serve to refer to a body system, an anatomical organ, a process, or a condition.

Ac/ Ar/ Ary/ Eal/ Ic/ Al/ Ous/ Tic
Cardi**ac** – pertaining to the heart
Ventricul**ar** – of the ventricle/ connected to the ventricle
Pulmon**ary** – part of the lungs/ originating from the lungs
Esophag**eal** – from the esophagus/ part of the esophagus
Allerg**ic –** brought about by an allergy
Intestin**al** – belonging to or connected to the intestines
Eczemat**ous** – related to eczema
Therapeu**tic** – concerning therapy

➢ There are also suffixes which, when added to a word, changes its meaning from a noun to a verb

Ize/ Ate
Anesthet**ize –** to provide anesthetic, hence to cause loss of sensation or consciousness
Lact**ate –** the act of producing milk
Coagul**ate** – to congeal or to solidify fluid such as blood

Ate

Opi**ate –** an opium derivative Hemolys**ate** – an offshoot of hemolysis

➢ Occasionally, you may come across flexible suffixes with various meanings.

When the suffix **Genic** is added to a root word, this may mean “caused by”.

Ex: Cocci**genic** means produced by cocci

However, sometimes, -genic could also be used to mean “causing”.

Example: Colla**genic** which means that it triggers the production of collagen

Another use of -genic is to indicate association with a gene. Ex: Tri**genic**

➢ Suffixes are often used to suggest the characteristics, the purpose, or the ability of something.

Dry **Sensory -** possessing the ability of feeling or sensing (e.g. **Sensory** neurons)	
creates contractions	

The above suffixes are, at times, also used to indicate a connection to a body system, an anatomical organ, or a disease process.

Aud**ile** – concerning the auditory nerves

Respirat**ory** – connected with the organs for respiration (e.g. Respirat**ory** muscles)

Moreover, **Ile**, in itself may be used to indicate a condition.

E.g: *A patient is febr**ile** when he has a body temperature that is above normal.*

➢ **Oid** is a suffix which is used to suggest the resemblance of something to another.

Muc**oid** for instance, means something which resembles mucus.

➢ Some suffixes are used to signify specialties or specialists in the medical field.

Ician pertains to a professional in a specific field of study. A Pediatr**ician** is a specialist in the field of medicine dealing with child health and with treating children's illnesses.
Trics relates to medicine, doctors, or treatment. Obste**trics** is a branch of medicine which deals with childbirth and with caring for mothers who are about to give birth, are giving birth, or have given birth.
Iatry is from the Greek word 'iatrea' which translates to "the art of healing". This suffix pertains to a medical profession. Pod**iatry** is a branch of medicine concerned with the health and treatment of the illnesses and infections of the human foot.
Ian, on the other hand, is used to refer to an expert in a field of study.

An example of this is a Geriatric**ian**, who deals with elderly people.
Ist is a suffix used to denote a certified practitioner, such as in the case of a Pharmac**ist** who possesses a license to dispense pharmaceutical drugs.
Ologist is affixed to a word to pertain to someone who concentrates in a specific field of study. A Psycholog**ist** specializes in psychology. However, only a Psychiatrist is licensed to prescribe medications to patients.
Ology, of course, means study, as in Neurol**ogy** This is a field of medicine that is concerned with the parts, the working, and the disorders of the nervous system and the nerves.

➢ There are suffixes which are attached to nouns to emphasize their singular form.

Us	
A streptococcus is a single bacterium	
The cerebellum is the part of the brain located in the rear of the skull. It governs vital functions, such as coordination and muscular movement.	

➢ Lastly, there are suffixes which, when added, to a root word, has a diminutive effect.

Vesicle is a small sac filled with fluid	
Arteriole is the smallest branch in the arterial circulation	
Papilla is a small pigmented	

patches on the skin without elevation	
Papule Medical term for a small pimple or a raised swelling on the skin It may be inflamed, but it is not pus-filled.	

Ready for an exercise now?

Medical Terms Exercise

Instruction: Choose the right answer.

1. Suffix “uria” is? **Answer: _____**

condition of urine
urethra
kidney
ureter

1. Amyl/o is? **Answer: _____**

gland
fat
male
starch

1. Prefix “ab” is? **Answer: _____**

down
away from
up
towards

1. Prefix “polio” is what color? **Answer: _____**

black
yellow
gray
red

1. Suffix “oid” is? **Answer: _____**

away
resembling
different
middle

1. Onc/o is? **Answer: _____**

growth
tumor
cell
nail

1. Prefix “neo” is? **Answer: _____**

child
old

baby
new

1. Narc/o is? **Answer: _____**

death
stupor
night
drug

1. Suffix “lithiasis” is? **Answer: _____**

presence of stones
crushing
narrowing
presence of fluid

1. Prefix “hemi” is? **Answer: _____**

quarter
tenth
half
cut

1. Ot/o is? **Answer: _____**

ear
bone
auricle
ossicle

1. Splen/o is? **Answer: _____**

spleen
spasm
pulse
sternum

1. Suffix “natal” is? **Answer: _____**

pregnancy
woman
birth
new

1. Prefix “chlor” is? **Answer: _____**

blue
black
green
white

1. Prefix “retro” is? **Answer: _____**

past

present
forward
backward

Great job! Answers are in the second to the last chapter.

Chapter 7: Eponyms, Homonyms, and More

Homonyms

Derived from the Greek term *Homonymos* which translates to “same name”, homonyms refer to words which are pronounced in the same (or in almost the same) way. However, they have completely different definitions. Their spellings may also differ.

The English language is stuffed with homonyms, and so is the medical language. Thus, when healthcare workers communicate with each other, or with their patients, it becomes necessary to check, recheck, and keep rechecking prescriptions, requests, orders, verbal reports, etc. just to make sure that one was able to understand the other correctly. Even if you’re not in the medical field, it would be advantageous to know whether your doctor is talking about the long bone in your forelimb (humerus) or if he just thinks you’re funny (humorous).

In the table below, you’ll find a compilation of the most common, most slippery medical homonyms.

Agonist a pharmaceutical agent that triggers the action of cells in a manner that they would be stimulated by the naturally occurring byproducts	**Antagonist** a pharmaceutical agent that inhibits the action of cells
Enuresis the inability to control urination especially while sleeping at night	**Anuresis** the inability of the kidneys to produce urine
Epiphysis the end of a long bone	**Diaphysis** the shaft of a long bone
Oral pertaining to the mouth, its parts, and its functions	**Otic** pertaining to the ear, its parts, and its functions
Core pertaining to the heart	**Cor** the heart
Diastasis a condition wherein anatomical	**Diaphysis** a long bone’s shaft situated between the epiphyses

parts that are usually joined together end up separating; may occur in bones as well as muscles	
Diathesis an individual's predisposition to a certain health condition	
Dyskeratosis an abnormal keratinization in the squamous epithelium (cornification of the individual cells in the skin, nails, and mucous membranes) which occurs in cancers, and may precede the formation of a malignant epidermis	
Dysphagia trouble with swallowing	
Dysphasia inability or trouble with the ability to comprehend speech, due to brain injury or a disease	
Galactorrhea milky discharge of flow of milk from the breasts	
Humeral concerned with the humerus bone	
Hypothesis a scientific supposition, which seeks to provide an explanation for a phenomenon	
Ileum the third segment of the colon, situated between the cecum and the jejunum	
Lice ectoparasites which can infest various hair-bearing parts of the body, from the head to the toe	
Malleolus the bony projection on the ankle that resembles a mallet	
Metastasis the spread of cancer cells from the primary site to a secondary site, usually through the blood or lymph vessels	
Mucous	

Mucus a thick, sticky secretion, secreted by mucous membranes, that acts as a protectant and a lubricant	
Ostial pertaining to an ostium, an opening (which involves, but is not limited to, the ostia of the heart)	
Perfuse to bring about the infusion of blood throughout the tissue or organ **Perfusion** the passage of blood or other fluid through the vessels of an organ or tissue, usually to bring about the diffusion of something within a tissue	
Radical treatment directed toward the possible prolongation or spread of a morbid process, such as in radical treatment	
Resection a surgical procedure in which a segment of an anatomical structure is surgically removed (e.g. a resection of the eye, in order to correct an improper alignment of the eyes)	
Tract pertaining to an anatomical system of organs such as the respiratory tract It may also be used to refer to an aberrant passage through the tissue, such as in the case of a fistula which just creates a deviant system of its own	
Vesicle pertaining to the bladder, like the seminal vesicles of men	
Viscous thick, gelatinous, used to describe bodily secretions	

Eponyms

From the Greek word *eponymos* which translates to “to name”, Eponyms in medical terms refer to the person, object, or place after which a disease, an instrument, a clinical sign, or a procedure was named. It’s a great way to honor the doctors, the scientists, or the researchers who have discovered, designed, inspired, improved, or invented these tools, methods, and knowledge that we are using today.

Achilles Tendon Achilles was the hero of Greek mythology who was physically located at the back part of the leg It is the thickest tendon in the human anatomy.		
Addison’s Disease Addison was the first one to identify the disease in the 1850’s Addison’s disease is a condition in which the adrenal glands do not produce enough steroid hormones		
Alzheimer’s Disease Alois Alzheimer was a German neurologist who first described the disease in 1906 Alzheimer’s disease is a brain disorder that slowly destroys memory and thinking skills, and eventually the ability to carry out the simplest tasks It is the most common cause of dementia, a general term for loss of mental faculties, caused by brain degeneration		

The affected individual experiences memory loss, as well as a decline in his cognitive abilities.		
Apgar Score Apgar was a specialist in the field of Obstetrics This is a way to assess the health of a neonate’s health after it is born		
Bartholin’s Gland Situated on either side, and slightly behind the vaginal opening These glands are responsible for secreting mucus to provide lubrication to the vaginal region.		
Bell’s Palsy This is a condition that renders the affected individual incapable of controlling the muscles on the affected side of the face.		
Broca’s Aphasia This is due to the damage sustained by the left front		

part of the brain after a stroke.		
Cushing's Syndrome Named for William Cushing who brought about by excessively elevated levels of cortisol Along with other symptoms, the affected individual experiences weight gain and thin skin that is easily bruised.		
Down's Syndrome Named for John Langdon Down who described it in England in the 1860's A chromosomal disorder in which affected children manifest characteristic physical features. It is accompanied by delayed physical and mental development, with some degree of learning disability.		
Eustachian Tube Named for Bartolomeo Eustachi, who described it A tube that connects the middle ear and the nasopharynx		
Heimlich Maneuver Named for Henry Heimlich, a surgeon, who developed this An abdominal thrust is performed during choking to rid the airways of		

obstruction by a foreign body.		
Hodgkin's Lymphoma Hodgkin's lymphoma is a cancer of the lymphatic system that was first described by Thomas Hodgkin in 1832. It is characterized by painless, progressive, enlargement of lymph nodes, fever, night sweats, and loss of weight. These may be palpated in the neck, in the axilla, or in the groin.		
Homans' Sign Homans' sign is elicited when a surgeon experiences pain in the calf region upon dorsiflexion of the foot, this is referred to as Homans' sign. It is indicative of deep vein thrombosis.		
Whipple Procedure The Whipple procedure is a gastrointestinal surgical procedure where the head of the pancreas adjacent to the duodenum is removed This is performed as a treatment for cancer of the pancreas. The duodenum is removed as well, along with certain areas of the gallbladder and the common bile duct.		

Sometimes, in this radical procedure, a portion of the stomach is also taken out.	

Acronyms

Medical acronyms are abridged versions of medical terms. They are usually made up of the initial letters or syllables of the full term. Sometimes, these acronyms are written in uppercase but that may not always be the case.

Every day, people use words that they don't even realize were actually acronyms. These include *radar* which actually stands for Radio Detection and Ranging. That's because such words have become so deeply integrated into everyday life that eventually, the letters just gave birth to a new word. The same truth applies to the medical field. The following are the most frequently encountered acronyms in the medical language.

Acronym	Meaning
AF	Atrial Fibrillation
AIDS	Acquired Immune Deficiency Syndrome
ARDS	Acute Respiratory Distress Syndrome
BPH	Benign Prostatic Hyperthropy
CAT scan	Computerized Axial Tomography
CNS	Central Nervous System
COPD	Chronic Obstructive Pulmonary Disease
CSF	Cerebrospinal Fluid
CVA	Cerebrovascular Accident
CXR	Chest X-ray
ECG	Electrocardiogram
ECT	Electroconvulsive Therapy
EEG	Electroencephalogram
ET	Endotracheal Tube
FB	Foreign Body
FHR	Fetal Heart Rate
GERD	Gastroesophageal Reflux Disease
GI	Gastrointestinal
HR	Heart Rate
HRT	Hormone Replacement Therapy
IBD	Inflammatory Bowel Disease

IBS	Irritable Bowel Syndrome
ICU	Intensive Care Unit
IUD	Intrauterine Device
KVO	Keep Vein Open
MRI	Magnetic Resonance Imaging
MS	Multiple Sclerosis
MVA	Motor Vehicle Accident
NG	Nasogastric
NSAID	Non-Steroidal Anti Inflammatory Drug
PEA	Pulseless Electrical Activity
PID	Pelvic Inflammatory Disease
PPIs	Proton Pump Inhibitors
PT	Prothrombin Time
Sz	Seizure
TAH	Total Abdominal Hysterectomy
THR	Total Hip Replacement
TKR	Total Knee Replacement
UA	Urinalysis
V/Q SCAN	Ventilation Perfusion Scan
VT/SVT	Ventricular/Atrial Tachycardia

Abbreviations

In the medical field, time is definitely gold. The survival, safety, and wellbeing of a patient does not just depend on how properly care is provided, but also on how *promptly* it is delivered. Thus, it is essential that professionals in the medical field create an efficient style of communication that is as quick as it is thorough. Being clear and concise is the key. For this reason, healthcare industry professionals make use of abbreviations. Below are the most commonly encountered abridgements in the medical area and what they mean.

frequently used in relation to pharmaceuticals

a.c. means prior to meals so the drug ordered a.c. will have to be administered before feeding. Conversely, **p.c.** is to be taken after meals.
b.i.d. means two times daily however, if a drug is to be taken strictly every 12 hours, then q12 is written.
cap is a shorter term for capsule.
gtt means drops, commonly used when ordering IV fluids.
IM is short for intramuscular and it usually pertains to the route of injection.
K means potassium. Potassium with chloride is **KCL**.
Meanwhile, sodium is **Na**. Both electrolytes are essential to the body's functions and thus, healthcare workers tend to keep an eye on their levels when a patient is under intensive care.
O.D is the condensed form of right eye while **O.S.** means left eye. To pertain to both eyes, **O.U.** is used. These are important especially when administering prescribed eye treatments like opthalmic drops.
PR is per rectum. This means a PR drug, such as a suppository, is to be administered rectally.
When a physician writes down **q.d**., it means that a drug must be taken every day. **qod**, on the other hand, means every other day. **q.i.d** is four times daily. *These do not just pertain to drugs but also to other interventions. (ex. chest therapy q.i.d. means to provide physiotherapy to the patient four times a day)
q2h and **q3h** mean every 2 hours and every 3 hours respectively.
qAM, **qPM**, and **qhs** stands for every morning, every evening, and every each bedtime correspondingly.
STAT means that the order must be carried out immediately.

frequently used in relation to surgery and treatment

BKA means below the knee amputation
A **DNR** order means Do Not Resuscitate. Hence, when a patient goes into cardiac arrest, the medical team will not take any measures to resuscitate him. This is applicable to near death patients wherein the priority is to ensure a peaceful and dignified passing.
Rather than saying "in the body", a quicker way to do it would be to say **in vivo**.
In vitro, on the other hand, means in the laboratory, as in the case of In Vitro Fertilization.
LLQ stands for left lower quadrant. The definition of this will be discussed more thoroughly in the succeeding chapters.
Meanwhile, **LUQ** is left upper quadrant.
npo is the abbreviation for nil per oral or nothing by mouth. This means that a

patient is not allowed to consume food or drinks prior to or after a surgical procedure or a diagnostic test.
RLQ means right lower quadrant. So if a patient is complaining from pain in the right side of the abdomen, specifically in the lower region, then the medical professional can write down RLQ pain or pain in RLQ.
RUQ means right upper quadrant.
tab refers to medication in tablet form.

frequently used in relation to assessment, documentation, and diagnostics

a/**g** refers to the ratio of albumin to globulin
BP pertains to blood pressure
C&S means culture sensitivity test; a test performed to identify a pathogen, and to determine the best choice of medicine that can be used to inhibit its growth
CC is an abbreviation for chief complaint. This indicates the reason why the patient sought medical attention in the first place. (ex: CC of fever for 7 days)
This is not to be confused with cc in small letters. **cc** stand for cubic centimeters, customarily used when measuring the amount of fluid taken from a patient's body.
CBC stands for complete blood count. This blood test is conducted to assess a person's general health. It is effective in detecting a broad range of hematological and non-hematological disorders.
When a physician writes down **D**/**C**, this means something (a treatment, a drug, etc.) will have to be discontinued.
On the other hand, **DC** means discharge and is used to indicate that the patient is ready to go back home from the hospital.
DTR means Deep Tendon Reflexes. This is what the doctor checks for when s/he hits a tendon with a hammer.
DOE is short for Dyspnea On Exertion. This means a patient may not be having difficulty of breathing while he's at rest but he is dyspneic when he's ambulatory or performing activities.
DX stands for diagnosis.
LBP is lower back pain
N/**V** is the abridged form of nausea and vomiting.
T is temperature as measured by a thermometer.

frequently used in relation to diseases

DM is short for diabetes mellitus
DVT means Deep Vein Thrombosis (when a blood clot occurs in a deep vein/s of the body. The leg is the most affected body part.)
FX indicates a fracture
HTN stands for hypertension
Upper respiratory tract infections and urinary tract infections are common enough to warrant their own abbreviations: **URI** and **UTI**

Symbols

Why do medical professionals bother with symbols? It's not that they are deliberately trying to be cryptic. Actually, the reason why symbols are used for communication in the medical setting is because they tend to speed things up. A nurse can easily understand a doctor's order just by glancing at an icon, thus saving precious time.

Moreover, symbols also help in preventing confusion between healthcare professionals. This is especially true in cases where words can be interpreted differently by various individuals. Simply put, symbols are more likely to provide uniformity and are less prone to personalized, biased interpretation.

In the medical language, another way to write **Approximate** is ≈.
α is **Alpha** so instead of jotting down alpha adrenergic blockers, you can put down α-blockers.
A shorter way to say **At** is **@**.
Meanwhile, this symbol means **Before**: **ā**
Δ means **To Change**.
When describing **Degrees**, a healthcare professional may just put down **1⁰**, **2⁰ 3⁰**, which means first, second, and third degrees respectively.
↑ means **Increase** or **Increased**. Hence, to advise a patient to increase consumption of liquids, the physician may write ↑ fluid intake.
Correspondingly, ↓ means **Decrease** or **Decreased** such as in ↓ urine output. (decreased urine output)
A **Female** subject may be represented by ♀. Just as a **Male** subject may be signified by ♂.
Just like in basic math, **<** in Medicine means **Less than** and **>** means **Greater than**.
Likewise, **=** means **Equal to**.
Instead of writing down **None**, you can put down **Ø**.
50 **Micrograms** of a drug is 50 **µg**.
+ pertains to **Positive** whereas **–** means **Negative**.

Chapter 8: Pluralizing Medical Terms

Rules for the Formation of Plurals

When it comes to the formation of plural forms in the medical language, the following general rules apply:

➢ If the singular form of the word ends in an **–a** suffix, then it is written in the plural form by adding an **e** at the end.

E.g: bursa = bursa**e**

➢ If the singular form of the word ends in an **–ex** suffix or in an **–ix** suffix, then it is changed into the plural form by turning the ending into **–ices**.

E.g: apex = ap**ices**

➢ That said, if the singular word ends in **-nx**, such as in the case of phalanx, then the x is removed and changed to **ges**.

E.g: phalanx = phalan**ges**

➢ Still, if the singular form of the words ends only with an **-x**, then the plural form is

created by replacing x with **ces**.

E.g: thorax = thora**ces**

➢ When it comes to pluralizing singular words ending in **–is**, the end i is changed into an **e**.

E.g: testis = test**es**

There are,, however, certain exceptions:

Epididymis is changed into epididym**ides**.

Femoris is pluralized into femor**a**.

Iris in its plural form is ir**ides**.

➢ If the singular form of the medical term ends with an **-on**, replace the last two letters with **a**.

E.g: ganglion = gangli**a**

➢ The same rule applies to singular medical words ending in -**um**.

E.g: labium = labi**a**

➢ To pluralize singular words ending in **-us**, just remove the us and then add **i**.

E.g: malleolus = malleol**i**

There are, however, a few exceptions to this rule:

Corpus is changed into corp**ora**.

Plexus in its plural form is plexus**es**.

Viscus is pluralized into visc**era**.

➢ In the medical vocabulary, there are lots of terms ending in **–itis**. To change these into plural form, remove the itis and then affix **itides**.

E.g: meningitis = mening**itides**

➢ Meanwhile, singular words than end in **–is** are changed into the plural form dropping the is and placing **ides** in its stead.

E.g: arthritis = arthrit**ides**

➢ For singular medical terms that end in **-y**, the plural form is made by using **ies** to replace the y.

E.g: biopsy = biops**ies**

➢ For singular words ending in **-yx**, remove the x and replace with **c**. Afterwards, add **es**.

E.g: calyx = caly**ces**

➢ There are singular words that end in **ma**/ **oma**. In such cases, **ta** is added.

E.g: sarcoma = sarcoma**ta**

➢ There are also medical terms in which the singular and the pluralized forms are the same.

E.g: meatus = meatus

➢ How are medical terms that consist of two words dealt with? Easy. If the words were derived from Latin, and if they are a combination of a noun and an adjective, change both words into the plural form.

E.g: placenta previa = placenta**e** previa**e**

➢ Inevitably, there are a handful of terms which seem to be immune to all these rules.

Cornu is pluralized into cornu**a**.

Vas in its plural form is vas**a**.

Pons is changed into pon**tes**.

More Rules in the Medical Language

➢ When the medical word is of English origin, apply the rules that your grammar teacher taught you. To pluralize words, the end is simply changed to **s**.

E.g: infection = infection**s**

➢ However, if the word ends in **-s**, add **es**.

E.g: stress = stress**es**

➢ The same rule applies to English medical terms ending in **-ch**.

E.g: crutch = crutch**es**

➢ The previous rule also goes for English medical words ending in **-x** or in **-sh**.

E.g:

wash = wash**es**

flex = flex**es**

➢ If the singular English medical term ends in **-y**, see if the y is preceded by a consonant. If yes, then

change the y to **i**. Then, add **es**.

E.g: palsy = pals**ies**

➢ If the singular English medical term ends in **o**, see if the o is preceded by a consonant. If yes, add **nes**.

E.g: comedo = comedo**nes**

Exceptions to the rule include embryo, which is pluralized to embryo**s** and placebo in which the plural form is placebo**s**.

➢ As mentioned previously, abbreviations are used daily in the medical setting. As a general rule, measurement abbreviations are immune to the rules stated above.

E.g:

While one might say that *the cervix is a few centimeter**s** dilated*, one cannot say that *the cervix is 3 cm**s** dilated*. That's because the latter already comes with a number value.

Thus, the proper sentence would be: **The cervix is 3 cm dilated.**

➢ Numbers with single digits are pluralized by adding **'s** (s with an apostrophe).

E.g: The patient was asked to count backwards by 2**'s**.

That said, the apostrophe is dropped when pluralizing numbers with two digits and above.

Wrong: The patient is in his late 40's.

Correct: **The patient is in his late 40s**.

➢ When it comes to pluralizing acronyms, simply add an **s** to terms written in uppercase.

E.g: The abridgment for white blood cell is WBC.

To write white blood cells, put down WBC**s**.

➢ That said, if an abbreviation is written in the lowercase, then an apostrophe is needed.

E.g: wbc = wbc'**s**

Chapter 9: The Structure and Organization of the Body

Anatomical Planes

Anatomical planes refer to imaginary perpendicular and parallel lines drawn across the body, to divide it into sections. For medical professionals, this makes description of specific areas of the body easier.

➢ **Coronal Plane**

This is otherwise known as the Frontal Plane. It is the vertical place which separates the human body into anterior and posterior portions.

➢ **Midsagittal Plane**

This is also referred to as the body's midline. It is a horizontal plane which separates the left side of the body from the right, and vice versa.

➢ **Sagittal Plane**

This refers to a vertical plane which goes from the anterior to the posterior part of the body while separating the body into left and right portions.

➢ **Transverse Plane**

This pertains to a cross-wise plane which is parallel to the ground, and passes through the waistline. It separates the upper half of the human body from the lower half.

Body Positions

The following are the most commonly encountered terms which describe the position of the body as a whole.

➢ **Anatomic Position**

This is when the human body is standing upright. The arms are lying at each side and the palms are faced forward. Feet are positioned side by side and the toes are pointing forward.

➢ **Erect**

When the subject is standing upright.

➢ **Genupectoral**

Also referred to as the knee-chest position, it is when a patient goes on his knees on an examination table/bed. Then, his head and the upper part of his body are lowered onto the table/bed.

In this position, the majority of the body's weight is carried by the chest and the knees. This is preferable for rectal examinations.

➢ **Lateral Recumbent**

A side-lying position (either left or right) where the knee of one leg is slightly bent.

➢ **Sims Position**

A side-lying position wherein the patient is lying on his left side, but his right thigh and his right knee is pulled up toward his chest.

➢ **Prone**

When the patient is lying face down, and flat on his abdomen.

➢ **Dorsal Recumbent**

When the subject is lying flat on his back, facing up. (also known as supine)

➢ **Lithotomy**

The patient starts off in the supine position. Then, with the thighs apart, the legs are drawn towards the abdomen.

➢ **Fowler**

The patient lies supine, but the head part of the bed is raised 18 inches and the patient's knees are elevated.

➢ **Trendelenburg**

A position in which the subject is lying on his back, with the legs at a higher level than the head..

Body Regions

To most patients, a tummy ache is a tummy ache. However, if a patient can provide the healthcare professional with information as to which specific part of the abdomen is in pain, s/he can have an idea as to which internal body organs may be involved.

To make diagnoses easier and more accurate, the abdominal area is divided into four separate regions.

The Four Regions of the Abdomen

➢ **RUQ**

This is the right upper quadrant. In it, you'll find the right lobe of your liver along with your gallbladder, a portion of the small intestine, and a portion of the large intestine.

➢ **LUQ**

The left upper quadrant of the abdomen houses the stomach. It also contains the left lobe of your liver. In it, you'll find vital organs such as the pancreas and the spleen. It also contains portions of the small intestine and part of the large intestine.

➢ **RLQ**

In the right lower quadrant, you'll find the appendix. It also contains areas of the small and the large intestines. At the same time, it holds the right side of the ureter. In females, it houses the right ovary and the right fallopian tube.

➢ **LLQ**

Accordingly, the left lower quadrant contains the left ovary and the left fallopian tube in females. It also holds the left ureter. Moreover, it contains portions of the small intestine and parts of the large intestine.

The Nine Regions

The abdominal-pelvic areas are further divided into nine subdivisions.

Region	Organs
Region I Right Hypochondriac Region	Right part of the upper abdomen, specifically the liver's right lobe, the gallbladder, and beneath the lower rib cartilage
Region II Epigastric Region	Middle section of the upper abdomen, specifically the top of the liver, the stomach, and the upper part of the pancreas
Region III Left Hypochondriac Region	Left part of the upper abdomen, specifically the left lobe of the liver, the spleen, and the upper part of the pancreas
Region IV Right Lumbar Region	Right side of the abdomen's mid-section, under Region I
Region V Umbilical Region	Middle section of the abdomen, specifically the small intestine
Region VI Left Lumbar Region	Left side of the abdomen's mid-section, under Region II
Region VII Right Inguinal Region / Right Iliac Region	Lower right part of the abdomen, under Region IV
Region VIII Pubic Region	Lower middle part of the abdomen, specifically the bladder, small intestine, and reproductive organs
Region IX Left Inguinal Region / Left Iliac Region	Lower left part of the abdomen, under Region VI

The Five Regions of the Spinal Column

The spinal column is also segmented into five different regions. This table describes these regions, from the top to bottom.

Lumbar Region	Lumbar vertebrae, labeled as L1 to L5 They make up the movable part of the spine. The vertebrae in this region are considered to be the strongest and largest of all.			
Sacral Region	Sacral vertebrae labeled from S1 to S5 As a child matures, these bones fuse together to create one big bone, which is the sacrum.			
Coccygeal region	Coccyx made up of four mini bones, Co1 – Co4, which fuse together before adulthood to create one small bone			

The Smaller Regions Found in the Body

Region	
Auricular	around the ears
Axillary	pits
Buccal	er part of the cheeks (facial)
Clavicular	ide of the breastbone
Infraorbital	w the eye/s
Infrascapular	the back of the body, just below the scapula (shoulder), on either side of the vertebrae.
Interscapular	ior part of the body, between the shoulder blades
Lumbar	er part of the back, inferior to the infrascapular area
Mammary	area all over the breast/s
Mental	the chin
Orbital	the eye/s
Pubic	or to the pubis
Sacral	the sacrum
Sternal	the sternum
Submental	chin
Supraclavicular	es

Body Cavities

The human body consists of two major cavities, which are then divided into smaller cavities. These are hollow spaces which serve to shelter the internal body organs.

Ventral Cavity

The ventral cavity houses the internal organs located in the anterior part of the body. The following table shows its subdivisions.

Thoracic Cavity		
carries vital organs such as the lungs, the heart, and the aorta. In this cavity, you'll also find the esophagus and the trachea.		
Abdominal Cavity		
Vital internal organs contained in this sub-cavity are the stomach, the intestines, the liver, and the kidneys. The abdominal cavity also contains the spleen, the gallbladder, and the pancreas.		
Pelvic Cavity		
sub-cavity are the reproductive organs. It also houses the		

urinary bladder.		

Dorsal Cavity

This major cavity carries the internal organs found in the posterior side of the body.

Body cavity **Cranial Cavity** **Spinal Cavity**		
Cranial Cavity cradles the brain.		
Spinal Cavity, you'll be able to locate the spinal cord, and nerves arising from it.		

Body Parts

View these tables to find out which medical terms correspond to specific body parts.

Anterior	
Antebrachial	Forearm
Antecubital	Front of elbow
Axillary	Armpit
Brachial	Arm
Carpal	Wrist
Cervical	Neck
Abdominal	Belly/Abdomen
Cephalic	Head
Cranial	Skull
Crural	Leg
Facial	Face
Frontal	Forehead
Femoral	Thigh
Inguinal	Groin
Mammary	Breast
Ocular	Eye
Oral	Mouth
Palmar	Palm
Patellar	Front of knee
Pedal	Foot
Phalangeal	Fingers/Toes
Pubic	Genitals
Tarsal	Ankle
Thoracic	Chest
Umbilical	Navel

Posterior	
Cervical	
Gluteal	
Hip	
Lumbar	
Occipital	
Parietal	
Popliteal	
Sacral	
Scapular	
Tarsal	
Plantar	

Chapter 10: Terminology of Body Systems

As you've read earlier, one of the most effective techniques in memorizing and decoding medical terms is to group them according to body systems. In this chapter, you'll find the most important root words associated with each major system of the body along with examples of their usage.

	The Cardiovascular System		
Term	Meaning of the Term	Example	Example
Angio-	pertaining to blood vessel	Angioma: a benign tumor made up of blood vessel	Angiosarcoma: a malignant tumor of blood vessel wall
Aorto-	pertaining to the aorta	Aortic valve: the valve which is situated between the left ventricle and the aorta	Aortography: a procedure in which the aorta is visualized after injection of a radiopaque substance
Arteri-	pertaining to arteries	Arteriole: a small artery	Arteriosclerosis: a condition in which arteries are hardened and thickened
Arterio-	pertaining to arteries	Arteriography: a procedure in which arteries are visualized after injection of a radiopaque substance	Arteriosclerosis: a condition in which arteries are hardened and thickened
Arteriol-	pertaining to arterioles	Arteriolosclerosis: a condition in which arterioles are hardened and thickened	Arteriolar: pertaining to arterioles
Arteriolo-	pertaining to arterioles	Arteriolosclerosis: a condition in which arterioles are hardened and thickened	Arteriolar: pertaining to arterioles
Arteriosclero-	pertaining to arteriosclerosis	Arteriosclerotic: pertaining to arteriosclerosis	Arteriosclerosis: a condition in which arteries are hardened and thickened
Arteriosclerosis	a condition in which arteries are hardened and thickened	Arteriosclerotic: pertaining to arteriosclerosis	Arteriosclerosis: a condition in which arteries are hardened and thickened
Arteriosclerotic	pertaining to arteriosclerosis	Arteriosclerotic: pertaining to arteriosclerosis	Arteriosclerosis: a condition in which arteries are hardened and thickened
Arteriovenous	pertaining to arteries and veins	Arteriovenous: pertaining to arteries and veins	Arteriovenous: pertaining to arteries and veins
Atheroma	a fatty substance accumulates in the inner layer of the arterial walls	Atheroma: a fatty substance accumulates in the inner layer of the arterial walls	Atheroma: a fatty substance accumulates in the inner layer of the arterial walls
Atherosclero-	pertaining to atherosclerosis	Atherosclerotic: pertaining to atherosclerosis	Atherosclerosis: a condition in which arteries are hardened and thickened
Atherosclerosis	a condition in which arteries are hardened and thickened	Atherosclerotic: pertaining to atherosclerosis	Atherosclerosis: a condition in which arteries are hardened and thickened
Atherosclerotic	pertaining to atherosclerosis	Atherosclerotic: pertaining to atherosclerosis	Atherosclerosis: a condition in which arteries are hardened and thickened
Atrial	pertaining to the atrium	Atrial: pertaining to the atrium	Atrial: pertaining to the atrium
Atrio-	pertaining to the atrium	Atrioventricular: pertaining to the atrium and the ventricle	Atrioventricular: pertaining to the atrium and the ventricle
Atrioventricular	pertaining to the atrium and the ventricle	Atrioventricular: pertaining to the atrium and the ventricle	Atrioventricular: pertaining to the atrium and the ventricle
Auricular	pertaining to the auricle	Auricular: pertaining to the auricle	Auricular: pertaining to the auricle
Auriculo-	pertaining to the auricle	Auriculoventricular: pertaining to the auricle and the ventricle	Auriculoventricular: pertaining to the auricle and the ventricle
Auriculoventricular	pertaining to the auricle and the ventricle	Auriculoventricular: pertaining to the auricle and the ventricle	Auriculoventricular: pertaining to the auricle and the ventricle
Axillo-	pertaining to the axilla	Axillobifemoral: pertaining to the axilla and the femur	Axillobifemoral: pertaining to the axilla and the femur
Axillobifemoral	pertaining to the axilla and the femur	Axillobifemoral: pertaining to the axilla and the femur	Axillobifemoral: pertaining to the axilla and the femur
Bi-	two	Bicuspid: having two cusps	Bicuspid: having two cusps
Bicuspid	having two cusps	Bicuspid: having two cusps	Bicuspid: having two cusps
Brachio-	pertaining to the arm	Brachiocephalic: pertaining to the arm and the head	Brachiocephalic: pertaining to the arm and the head
Brachiocephalic	pertaining to the arm and the head	Brachiocephalic: pertaining to the arm and the head	Brachiocephalic: pertaining to the arm and the head
Bradycardia	slow heart rate	Bradycardia: slow heart rate	Bradycardia: slow heart rate
Brady-	slow	Bradycardia: slow heart rate	Bradycardia: slow heart rate
Cardia	pertaining to the heart	Cardiac: pertaining to the heart	Cardiac: pertaining to the heart
Cardiac	pertaining to the heart	Cardiac: pertaining to the heart	Cardiac: pertaining to the heart
Cardio-	pertaining to the heart	Cardiomegaly: enlargement of the heart	Cardiomegaly: enlargement of the heart
Cardiomegaly	enlargement of the heart	Cardiomegaly: enlargement of the heart	Cardiomegaly: enlargement of the heart
Cardiopulmonary	pertaining to the heart and the lungs	Cardiopulmonary: pertaining to the heart and the lungs	Cardiopulmonary: pertaining to the heart and the lungs
Cardiorespiratory	pertaining to the heart and the respiratory system	Cardiorespiratory: pertaining to the heart and the respiratory system	Cardiorespiratory: pertaining to the heart and the respiratory system
Cardiovascular	pertaining to the heart and the blood vessels	Cardiovascular: pertaining to the heart and the blood vessels	Cardiovascular: pertaining to the heart and the blood vessels
Carotid	pertaining to the carotid artery	Carotid: pertaining to the carotid artery	Carotid: pertaining to the carotid artery
Caval	pertaining to the vena cava	Caval: pertaining to the vena cava	Caval: pertaining to the vena cava
Cavo-	pertaining to the vena cava	Cavotricuspid: pertaining to the vena cava and the tricuspid valve	Cavotricuspid: pertaining to the vena cava and the tricuspid valve
Cavotricuspid	pertaining to the vena cava and the tricuspid valve	Cavotricuspid: pertaining to the vena cava and the tricuspid valve	Cavotricuspid: pertaining to the vena cava and the tricuspid valve
Cephalic	pertaining to the head	Cephalic: pertaining to the head	Cephalic: pertaining to the head
Cephalo-	pertaining to the head	Cephalothoracic: pertaining to the head and the thorax	Cephalothoracic: pertaining to the head and the thorax
Cephalothoracic	pertaining to the head and the thorax	Cephalothoracic: pertaining to the head and the thorax	Cephalothoracic: pertaining to the head and the thorax
Cerebral	pertaining to the cerebrum	Cerebral: pertaining to the cerebrum	Cerebral: pertaining to the cerebrum
Cerebro-	pertaining to the cerebrum	Cerebrovascular: pertaining to the cerebrum and the blood vessels	Cerebrovascular: pertaining to the cerebrum and the blood vessels
Cerebrovascular	pertaining to the cerebrum and the blood vessels	Cerebrovascular: pertaining to the cerebrum and the blood vessels	Cerebrovascular: pertaining to the cerebrum and the blood vessels
Chole-	pertaining to bile	Cholecystectomy: surgical removal of the gallbladder	Cholecystectomy: surgical removal of the gallbladder
Cholecystectomy	surgical removal of the gallbladder	Cholecystectomy: surgical removal of the gallbladder	Cholecystectomy: surgical removal of the gallbladder
Circulatory	pertaining to the circulation of blood	Circulatory: pertaining to the circulation of blood	Circulatory: pertaining to the circulation of blood
Circum-	around	Circumcision: surgical removal of the foreskin	Circumcision: surgical removal of the foreskin
Circumcision	surgical removal of the foreskin	Circumcision: surgical removal of the foreskin	Circumcision: surgical removal of the foreskin
Clavicular	pertaining to the clavicle	Clavicular: pertaining to the clavicle	Clavicular: pertaining to the clavicle
Clavicul-	pertaining to the clavicle	Clavicular: pertaining to the clavicle	Clavicular: pertaining to the clavicle
Coagulation	clotting	Coagulation: clotting	Coagulation: clotting
Coagulo-	pertaining to clotting	Coagulopathy: disorder of clotting	Coagulopathy: disorder of clotting
Coagulopathy	disorder of clotting	Coagulopathy: disorder of clotting	Coagulopathy: disorder of clotting
Coarctation	narrowing	Coarctation: narrowing	Coarctation: narrowing
Coarcto-	pertaining to narrowing	Coarctotomy: surgical incision of a narrowed vessel	Coarctotomy: surgical incision of a narrowed vessel
Coarctotomy	surgical incision of a narrowed vessel	Coarctotomy: surgical incision of a narrowed vessel	Coarctotomy: surgical incision of a narrowed vessel
Commissur-	pertaining to a commissure	Commissural: pertaining to a commissure	Commissural: pertaining to a commissure
Commissural	pertaining to a commissure	Commissural: pertaining to a commissure	Commissural: pertaining to a commissure
Commissurotomy	surgical incision of a commissure	Commissurotomy: surgical incision of a commissure	Commissurotomy: surgical incision of a commissure
Congenital	present at birth	Congenital: present at birth	Congenital: present at birth
Constrict-	pertaining to narrowing	Constriction: narrowing	Constriction: narrowing
Constriction	narrowing	Constriction: narrowing	Constriction: narrowing
Contract-	pertaining to contraction	Contraction: shortening	Contraction: shortening
Contraction	shortening	Contraction: shortening	Contraction: shortening
Coron-	pertaining to the coronary artery	Coronary: pertaining to the coronary artery	Coronary: pertaining to the coronary artery
Coronary	pertaining to the coronary artery	Coronary: pertaining to the coronary artery	Coronary: pertaining to the coronary artery
Coronaro-	pertaining to the coronary artery	Coronarography: a procedure in which the coronary artery is visualized after injection of a radiopaque substance	Coronarography: a procedure in which the coronary artery is visualized after injection of a radiopaque substance
Coronarography	a procedure in which the coronary artery is visualized after injection of a radiopaque substance	Coronarography: a procedure in which the coronary artery is visualized after injection of a radiopaque substance	Coronarography: a procedure in which the coronary artery is visualized after injection of a radiopaque substance
Cyan-	blue	Cyanosis: blue discoloration of the skin	Cyanosis: blue discoloration of the skin
Cyanosis	blue discoloration of the skin	Cyanosis: blue discoloration of the skin	Cyanosis: blue discoloration of the skin
Cyanotic	pertaining to cyanosis	Cyanotic: pertaining to cyanosis	Cyanotic: pertaining to cyanosis
Dextro-	pertaining to the right	Dextrocardia: pertaining to the right heart	Dextrocardia: pertaining to the right heart
Dextrocardia	pertaining to the right heart	Dextrocardia: pertaining to the right heart	Dextrocardia: pertaining to the right heart
Diastole	relaxation of the heart	Diastole: relaxation of the heart	Diastole: relaxation of the heart
Diastolic	pertaining to diastole	Diastolic: pertaining to diastole	Diastolic: pertaining to diastole
Dilat-	pertaining to dilation	Dilation: widening	Dilation: widening
Dilation	widening	Dilation: widening	Dilation: widening
Dysrhythmia	irregular heart rhythm	Dysrhythmia: irregular heart rhythm	Dysrhythmia: irregular heart rhythm
Dys-	bad, difficult	Dysrhythmia: irregular heart rhythm	Dysrhythmia: irregular heart rhythm
Ectasia	dilation	Ectasia: dilation	Ectasia: dilation
Ecto-	outside	Ectopic: outside the normal location	Ectopic: outside the normal location
Ectopic	outside the normal location	Ectopic: outside the normal location	Ectopic: outside the normal location
Edema	swelling	Edema: swelling	Edema: swelling
Electrocardiogram	a record of the electrical activity of the heart	Electrocardiogram: a record of the electrical activity of the heart	Electrocardiogram: a record of the electrical activity of the heart
Electrocardiograph	a machine that records the electrical activity of the heart	Electrocardiograph: a machine that records the electrical activity of the heart	Electrocardiograph: a machine that records the electrical activity of the heart
Electrocardiography	the process of recording the electrical activity of the heart	Electrocardiography: the process of recording the electrical activity of the heart	Electrocardiography: the process of recording the electrical activity of the heart
Electrocardiographic	pertaining to electrocardiography	Electrocardiographic: pertaining to electrocardiography	Electrocardiographic: pertaining to electrocardiography
Electro-	pertaining to electricity	Electrocardiogram: a record of the electrical activity of the heart	Electrocardiogram: a record of the electrical activity of the heart
Embol-	pertaining to an embolus	Embolism: obstruction of a blood vessel by an embolus	Embolism: obstruction of a blood vessel by an embolus
Embolectomy	surgical removal of an embolus	Embolectomy: surgical removal of an embolus	Embolectomy: surgical removal of an embolus
Embolism	obstruction of a blood vessel by an embolus	Embolism: obstruction of a blood vessel by an embolus	Embolism: obstruction of a blood vessel by an embolus
Embolus	a clot that travels through the bloodstream	Embolus: a clot that travels through the bloodstream	Embolus: a clot that travels through the bloodstream
Endarterectomy	surgical removal of the inner lining of an artery	Endarterectomy: surgical removal of the inner lining of an artery	Endarterectomy: surgical removal of the inner lining of an artery
Endo-	inside	Endocardium: the inner lining of the heart	Endocardium: the inner lining of the heart
Endocardium	the inner lining of the heart	Endocardium: the inner lining of the heart	Endocardium: the inner lining of the heart
Endocarditis	inflammation of the endocardium	Endocarditis: inflammation of the endocardium	Endocarditis: inflammation of the endocardium
Endocardium	the inner lining of the heart	Endocardium: the inner lining of the heart	Endocardium: the inner lining of the heart
Endothelium	the inner lining of blood vessels	Endothelium: the inner lining of blood vessels	Endothelium: the inner lining of blood vessels
Epicardium	the outer lining of the heart	Epicardium: the outer lining of the heart	Epicardium: the outer lining of the heart
Epicardial	pertaining to the epicardium	Epicardial: pertaining to the epicardium	Epicardial: pertaining to the epicardium
Epi-	upon	Epicardium: the outer lining of the heart	Epicardium: the outer lining of the heart
Erythro-	red	Erythrocyte: red blood cell	Erythrocyte: red blood cell
Erythrocyte	red blood cell	Erythrocyte: red blood cell	Erythrocyte: red blood cell
Exsanguination	loss of blood	Exsanguination: loss of blood	Exsanguination: loss of blood
Exsanguinate	to lose blood	Exsanguinate: to lose blood	Exsanguinate: to lose blood
Femoral	pertaining to the femur	Femoral: pertaining to the femur	Femoral: pertaining to the femur
Femoro-	pertaining to the femur	Femoropopliteal: pertaining to the femur and the popliteal artery	Femoropopliteal: pertaining to the femur and the popliteal artery
Femoropopliteal	pertaining to the femur and the popliteal artery	Femoropopliteal: pertaining to the femur and the popliteal artery	Femoropopliteal: pertaining to the femur and the popliteal artery
Fibrillation	rapid, irregular contraction of the heart muscle	Fibrillation: rapid, irregular contraction of the heart muscle	Fibrillation: rapid, irregular contraction of the heart muscle
Fibrillatory	pertaining to fibrillation	Fibrillatory: pertaining to fibrillation	Fibrillatory: pertaining to fibrillation
Fibrinolysis	breakdown of fibrin	Fibrinolysis: breakdown of fibrin	Fibrinolysis: breakdown of fibrin
Fibrinolytic	pertaining to fibrinolysis	Fibrinolytic: pertaining to fibrinolysis	Fibrinolytic: pertaining to fibrinolysis
Fibrin-	pertaining to fibrin	Fibrinolysis: breakdown of fibrin	Fibrinolysis: breakdown of fibrin
Fibro-	pertaining to fibrous tissue	Fibrosis: formation of fibrous tissue	Fibrosis: formation of fibrous tissue
Fibrosis	formation of fibrous tissue	Fibrosis: formation of fibrous tissue	Fibrosis: formation of fibrous tissue
Fibrous	pertaining to fibrous tissue	Fibrous: pertaining to fibrous tissue	Fibrous: pertaining to fibrous tissue
Hemangio-	pertaining to blood vessels	Hemangioma: a benign tumor made up of blood vessels	Hemangiosarcoma: a malignant tumor of blood vessel wall
Hemangioma	a benign tumor made up of blood vessels	Hemangioma: a benign tumor made up of blood vessels	Hemangiosarcoma: a malignant tumor of blood vessel wall
Hemangiosarcoma	a malignant tumor of blood vessel wall	Hemangiosarcoma: a malignant tumor of blood vessel wall	Hemangiosarcoma: a malignant tumor of blood vessel wall
Hemat-	pertaining to blood	Hematocrit: the percentage of red blood cells in the blood	Hematocrit: the percentage of red blood cells in the blood
Hematocrit	the percentage of red blood cells in the blood	Hematocrit: the percentage of red blood cells in the blood	Hematocrit: the percentage of red blood cells in the blood
Hematoma	a collection of blood outside the blood vessels	Hematoma: a collection of blood outside the blood vessels	Hematoma: a collection of blood outside the blood vessels
Hemo-	pertaining to blood	Hemoglobin: the protein in red blood cells that carries oxygen	Hemoglobin: the protein in red blood cells that carries oxygen
Hemoglobin	the protein in red blood cells that carries oxygen	Hemoglobin: the protein in red blood cells that carries oxygen	Hemoglobin: the protein in red blood cells that carries oxygen
Hemorrhage	excessive bleeding	Hemorrhage: excessive bleeding	Hemorrhage: excessive bleeding
Hemorrhagic	pertaining to hemorrhage	Hemorrhagic: pertaining to hemorrhage	Hemorrhagic: pertaining to hemorrhage
Hemostasis	stoppage of bleeding	Hemostasis: stoppage of bleeding	Hemostasis: stoppage of bleeding
Hemostatic	pertaining to hemostasis	Hemostatic: pertaining to hemostasis	Hemostatic: pertaining to hemostasis
Hepato-	pertaining to the liver	Hepatomegaly: enlargement of the liver	Hepatomegaly: enlargement of the liver
Hepatomegaly	enlargement of the liver	Hepatomegaly: enlargement of the liver	Hepatomegaly: enlargement of the liver
Hypertension	high blood pressure	Hypertension: high blood pressure	Hypertension: high blood pressure
Hyper-	excessive, above	Hypertension: high blood pressure	Hypertension: high blood pressure
Hypertensive	pertaining to hypertension	Hypertensive: pertaining to hypertension	Hypertensive: pertaining to hypertension
Hypotension	low blood pressure	Hypotension: low blood pressure	Hypotension: low blood pressure
Hypo-	deficient, below	Hypotension: low blood pressure	Hypotension: low blood pressure
Hypotensive	pertaining to hypotension	Hypotensive: pertaining to hypotension	Hypotensive: pertaining to hypotension
Ileo-	pertaining to the ileum	Ileocecal: pertaining to the ileum and the cecum	Ileocecal: pertaining to the ileum and the cecum
Ileocecal	pertaining to the ileum and the cecum	Ileocecal: pertaining to the ileum and the cecum	Ileocecal: pertaining to the ileum and the cecum
Ileum	the last part of the small intestine	Ileum: the last part of the small intestine	Ileum: the last part of the small intestine
Ileus	obstruction of the intestine	Ileus: obstruction of the intestine	Ileus: obstruction of the intestine
Ischemia	deficient blood supply	Ischemia: deficient blood supply	Ischemia: deficient blood supply
Ischemic	pertaining to ischemia	Ischemic: pertaining to ischemia	Ischemic: pertaining to ischemia
Isch-	pertaining to ischemia	Ischemia: deficient blood supply	Ischemia: deficient blood supply
Jugular	pertaining to the jugular vein	Jugular: pertaining to the jugular vein	Jugular: pertaining to the jugular vein
Jugulo-	pertaining to the jugular vein	Jugulovenous: pertaining to the jugular vein and the vein	Jugulovenous: pertaining to the jugular vein and the vein
Jugulovenous	pertaining to the jugular vein and the vein	Jugulovenous: pertaining to the jugular vein and the vein	Jugulovenous: pertaining to the jugular vein and the vein
Lacteal	pertaining to the lacteal vessels	Lacteal: pertaining to the lacteal vessels	Lacteal: pertaining to the lacteal vessels
Lacteals	lymphatic vessels in the small intestine	Lacteals: lymphatic vessels in the small intestine	Lacteals: lymphatic vessels in the small intestine
Lacto-	pertaining to milk	Lactose: milk sugar	Lactose: milk sugar
Lactose	milk sugar	Lactose: milk sugar	Lactose: milk sugar
Leuko-	white	Leukocyte: white blood cell	Leukocyte: white blood cell
Leukocyte	white blood cell	Leukocyte: white blood cell	Leukocyte: white blood cell
Leukocytosis	increase in the number of white blood cells	Leukocytosis: increase in the number of white blood cells	Leukocytosis: increase in the number of white blood cells
Leukopenia	decrease in the number of white blood cells	Leukopenia: decrease in the number of white blood cells	Leukopenia: decrease in the number of white blood cells
Lipid	fat	Lipid: fat	Lipid: fat
Lipo-	pertaining to fat	Lipoma: a benign tumor made up of fat cells	Lipoma: a benign tumor made up of fat cells
Lipoma	a benign tumor made up of fat cells	Lipoma: a benign tumor made up of fat cells	Lipoma: a benign tumor made up of fat cells
Lymph	clear fluid that circulates in the lymphatic system	Lymph: clear fluid that circulates in the lymphatic system	Lymph: clear fluid that circulates in the lymphatic system
Lymphangio-	pertaining to lymph vessels	Lymphangiography: a procedure in which lymph vessels are visualized after injection of a radiopaque substance	Lymphangiography: a procedure in which lymph vessels are visualized after injection of a radiopaque substance
Lymphangiography	a procedure in which lymph vessels are visualized after injection of a radiopaque substance	Lymphangiography: a procedure in which lymph vessels are visualized after injection of a radiopaque substance	Lymphangiography: a procedure in which lymph vessels are visualized after injection of a radiopaque substance
Lymphatic	pertaining to lymph	Lymphatic: pertaining to lymph	Lymphatic: pertaining to lymph
Lymphocyte	white blood cell	Lymphocyte: white blood cell	Lymphocyte: white blood cell
Lymphocytosis	increase in the number of lymphocytes	Lymphocytosis: increase in the number of lymphocytes	Lymphocytosis: increase in the number of lymphocytes
Lymphoma	a tumor of lymphatic tissue	Lymphoma: a tumor of lymphatic tissue	Lymphoma: a tumor of lymphatic tissue
Lymph-	pertaining to lymph	Lymphatic: pertaining to lymph	Lymphatic: pertaining to lymph
Malleolar	pertaining to the malleolus	Malleolar: pertaining to the malleolus	Malleolar: pertaining to the malleolus
Malleolus	the ankle bone	Malleolus: the ankle bone	Malleolus: the ankle bone
Mediastin-	pertaining to the mediastinum	Mediastinal: pertaining to the mediastinum	Mediastinal: pertaining to the mediastinum
Mediastinal	pertaining to the mediastinum	Mediastinal: pertaining to the mediastinum	Mediastinal: pertaining to the mediastinum
Mediastinum	the space between the lungs	Mediastinum: the space between the lungs	Mediastinum: the space between the lungs
Medio-	middle	Mediastinum: the space between the lungs	Mediastinum: the space between the lungs
Metastasis	spread of disease from one organ to another	Metastasis: spread of disease from one organ to another	Metastasis: spread of disease from one organ to another
Metastatic	pertaining to metastasis	Metastatic: pertaining to metastasis	Metastatic: pertaining to metastasis
Metastasize	to spread from one organ to another	Metastasize: to spread from one organ to another	Metastasize: to spread from one organ to another
Metastasizing	spreading from one organ to another	Metastasizing: spreading from one organ to another	Metastasizing: spreading from one organ to another
Metro-	pertaining to the uterus	Metrorrhagia: abnormal uterine bleeding	Metrorrhagia: abnormal uterine bleeding
Metrorrhagia	abnormal uterine bleeding	Metrorrhagia: abnormal uterine bleeding	Metrorrhagia: abnormal uterine bleeding
Myocardial	pertaining to the myocardium	Myocardial: pertaining to the myocardium	Myocardial: pertaining to the myocardium
Myocardium	the muscular wall of the heart	Myocardium: the muscular wall of the heart	Myocardium: the muscular wall of the heart
Myocardi-	pertaining to the myocardium	Myocardial: pertaining to the myocardium	Myocardial: pertaining to the myocardium
Myocardiopathy	disease of the myocardium	Myocardiopathy: disease of the myocardium	Myocardiopathy: disease of the myocardium
Myocardiopathic	pertaining to myocardiopathy	Myocardiopathic: pertaining to myocardiopathy	Myocardiopathic: pertaining to myocardiopathy
Myocardiosclerosis	hardening of the myocardium	Myocardiosclerosis: hardening of the myocardium	Myocardiosclerosis: hardening of the myocardium
Myocardiosclerotic	pertaining to myocardiosclerosis	Myocardiosclerotic: pertaining to myocardiosclerosis	Myocardiosclerotic: pertaining to myocardiosclerosis
Myocardium	the muscular wall of the heart	Myocardium: the muscular wall of the heart	Myocardium: the muscular wall of the heart
Myocardi-	pertaining to the myocardium	Myocardial: pertaining to the myocardium	Myocardial: pertaining to the myocardium
Myocardiopathy	disease of the myocardium	Myocardiopathy: disease of the myocardium	Myocardiopathy: disease of the myocardium
Myocardiopathic	pertaining to myocardiopathy	Myocardiopathic: pertaining to myocardiopathy	Myocardiopathic: pertaining to myocardiopathy
Myocardiosclerosis	hardening of the myocardium	Myocardiosclerosis: hardening of the myocardium	Myocardiosclerosis: hardening of the myocardium
Myocardiosclerotic	pertaining to myocardiosclerosis	Myocardiosclerotic: pertaining to myocardiosclerosis	Myocardiosclerotic: pertaining to myocardiosclerosis
Myocardium	the muscular wall of the heart	Myocardium: the muscular wall of the heart	Myocardium: the muscular wall of the heart
Myocardi-	pertaining to the myocardium	Myocardial: pertaining to the myocardium	Myocardial: pertaining to the myocardium
Myocardiopathy	disease of the myocardium	Myocardiopathy: disease of the myocardium	Myocardiopathy: disease of the myocardium
Myocardiopathic	pertaining to myocardiopathy	Myocardiopathic: pertaining to myocardiopathy	Myocardiopathic: pertaining to myocardiopathy
Myocardiosclerosis	hardening of the myocardium	Myocardiosclerosis: hardening of the myocardium	Myocardiosclerosis: hardening of the myocardium
Myocardiosclerotic	pertaining to myocardiosclerosis	Myocardiosclerotic: pertaining to myocardiosclerosis	Myocardiosclerotic: pertaining to myocardiosclerosis

the two superior heart chambers			
Cardiologist			
Cardiac			
Hemorrhage			
Pericardiocentesis			
Phlebotomy			
Thrombocytes			
Vasodilators			

	The Respiratory System		
Example of the			
Example			
Alveoli			

Nasolabial folds			
Nasolabial folds or laugh lines which run from the nose down to the corner of the mouth			
Oxygen Saturation			
Oxygen Saturation measure the oxygen saturation of the blood via an indirect method			
Pleuritis Pleural			
Pleuritis when the pleura which are dual layers of membrane that are located on the outside of the lungs			

	The Gastrointestinal System		
Example of the Example			
Appendicitis Appendix Appendic			
Bile Bile Bile			
Bile, which is the yellow-brownish to green-like fluid that the liver secretes, and keeps in the gallbladder Its purpose is to aid in the digestion of fat.			
Gastric the			

procedure in which a catheter is inserted into the rectum and joined to the ileum's bottom part. The ileum is the bottommost part of the small intestine.			

	The Endocrine System		
Example of the Example Example Adrenal gland Adrenal			
Adrenaline Adrenal gland			
Glucagon Glucose			
Glycogenesis Glycogen			
Gonadotrophin Gonads			
Pancreas Pancreas			
Parathyroid Parathyroid gland			

deficiency, in which the blood can cause abnormal spasms of the muscles.			
Thyroid			

Myco Myco			
Onych			
Sebo Sebo			
Steat			
Tricho Tricho			

	The Musculoskeletal System		
Arthro Arthro			
Coxo			
Ischio			
Kypho Kypho			
Lordo			

pressure on the spinal cord, in the vertebra's canal			
Leiomyoma	A tumor in muscle tissue that is non-malignant		
Nephrectomy	The kidney is excised		
Lumbar vertebrae	The five vertebrae located on the lower back		
Maxillary	Relating to the jaw		
Myositis	The muscle tissue is severely inflamed, and prone to degeneration		
Osteoarthritis	A disease of the joints due to the wearing of cartilage, causing bones to rub against each other. This is typically accompanied by pain in the bone and the joint.		
Scoliosis	A condition wherein the spine is abnormally curved sideways		
Spondylitis	Inflammation of the vertebra		
Synovitis	Relating to the synovial membrane of the joint is inflamed		

	lines the joint cavities This produces synovial fluid, which provides lubrication to joints.

	The Nervous System		

The Sensory System

Term	Definition	Example	Image
Audiometry	Measurement of an individual's sense of hearing, both in terms of sensitivity and range		
Cochleostomy	Surgical procedure wherein an opening is made in the cochlea		
Conjunctivitis	Inflammation of the conjunctiva (the eye-covering membrane that lines the eyelid and covers the eye)		
Coreoplasty	Surgical procedure to fix the shape or the size of the pupil		
Cornea	Clear, dome-shaped layer of the eye that covers the transparent front part of the eyeball which bends light		
Cross-eyed	Misalignment of the eyes (clinical term for cross-eye)		
Dacryocystitis	Inflammation of the lacrimal sac		
Lacrimal	Relating to the lacrimal duct. The lacrimal glands work to keep the eyes moist. They are		

consequences of hyperparathyroidism.			
Pyelography	Pyelography is the radiography of the kidneys, the bladder, and the ureters with the aid of a contrast medium (usually iodine) introduced into veins		
Renal atrophy	Renal atrophy is the shrinkage or decrease in size of the kidney		
Ureterostomy	Ureterostomy is a surgical procedure wherein an opening is created within the ureter, so that the flow of the urine can be diverted away from the bladder. This is done in the case of a dysfunctional or surgically excised bladder.		
Urethroplasty	Urethroplasty is the surgical repair of the urethra to create a permanent opening which is either one of the two ducts that transport urine from the kidney towards the urinary bladder.		
Ureteroplasty	Ureteroplasty is the surgical repair of the ureter, for the purpose of removing stones or other structures that are blocking the flow of urine from the kidney to the bladder.		

The Female Reproductive System			
Example of the Example	Example of the Example		
Cervicitis	Cervicitis is the inflammation of the cervix		

The Male Reproductive System			
Scrotum			
Testicle			
Androgen	a hormone which triggers and maintains male characteristics		
Penis			
Glans penis			
Foreskin			
Epididymis			
Vas deferens			
Urethra			
Orchiectomy	a surgical procedure in which the testes are removed		
Orchid/ Orchio			
Prostate			
Prostatectomy			
Semen			
Spermatozoa			

Chapter 11: Answers

This section contains answers to exercises from the previous chapters.

Answers to Chapter 3
1. laryng
2. neur
3. oste
4. cardia
5. encephal
6. peri - itis
7. pathy
8. electro - gram
9. hyper - emia
10. rhin
11. bone
12. hypotension
13. true
14. false
15. Colonoscopy

Answers to Chapter 4
1. j
2. guy
3. j
4. f
5. k
6. sk
7. k
8. f
9. e
10. new
11. e
12. see
13. si
14. f
15. thee

Answers to Chapter 6
1. condition of urine
2. starch
3. away from
4. gray

5. resembling
6. tumor
7. new
8. stupor
9. presence of stones
10. half
11. ear
12. spleen
13. pregnancy
14. green
15. backward

Good Job!

Download the ‘Additional Questions’ ebook to receive even more exercises with answers!
You can find it **HERE**

Chapter 12: Tips and Additional Resources

Every week, millions of viewers tune in to television shows about doctors, and delight at the medical language onscreen "doctors" use. Fans pick up bits and pieces of medical terms and assume they're now wise and knowledgeable about medical language. It's fun, but in truth, knowing and memorizing medical terms is not easy. There are millions of words to know and remember. Knowing where words came from and how they were formed is key. While everybody is not in the medical profession, and may not view medical-related shows, it is important to have at least a basic knowledge of medical terminology.

A. **Tips**

Here are some tips to help learners understand, pronounce, and memorize medical terms:

1. Build good study habits by taking down notes during class/training (when needed – it is still important to listen to instructors/teachers/professors), organizing notes on lessons, and reading lessons regularly.
2. Rest when needed. Make sure to get enough rest because the human brain needs rest, too.
3. Create a schedule for studying. Choosing a specific time to study each day prevents cramming.
4. Ask for help when necessary, especially about lessons or medical terms that are really hard to understand. Classmates, professors, teachers, or instructors can always be approached for help.
5. Take practice tests or quizzes online. Many of them are interactive which takes boredom out of studying.
6. Play word games using flashcards, or other tools such as phone apps, or online interactive tools.
7. Aside from visual cues, learners can use other words that can be associated with medical terms. This is easier by using one's own words to describe a particular medical term. For example, inflammation of the nose is rhinitis. It can be associated with the word rhino.

A. Additional Resources

There are also other additional resources that can be used when studying medical terms, as follows:

1. Guides and Workbooks

Guides and workbooks are good alternatives to heavy medical dictionaries and books. The same information is provided when exploring them, but these are easier to understand, and are available in shorter versions. For instance, books that were written and developed to help learners understand medical terms and make them memorize words effectively.

Here are some of the best guides and workbooks for memorizing medical terms:

Medical Terminology: A Living Language
This book features a lot of medical information that are delivered for easy reading. It doesn't contain boring topics, usually seen in medical books. It also features up-to-date medical terms that were meticulously selected and cataloged. This book was written by Suzanne Frucht and Bonnie Fremgen.

Quick Medical Terminology: A Self-Teaching Guide
According to the authors, this book provides necessary tools for building and maintaining a large working knowledge of medical terms. They include a number of practice exercises, quizzes, and real examples to help learners develop and train their memory. This book was written by Shirley Steiner and Natalie Capps.

1. Online Practice Quizzes

There are also a number of practice quizzes that are available online. Even some of the phone apps mentioned in Chapter 4 have their own online versions of their practice quizzes. These are fun to use because many of them are interactive. Some of the recommended online practice quizzes include:

Sporacle
This features a section dedicated to teaching medical terms, including hundreds of basic and complicated words. It offers addictive quizzes and timed exercises to keep learners interested.

ProProfs Quiz
This site also includes a section of quizzes that are related to medical terms and topics. It offers long quizzes with hundreds of questions.

1. **Online Flashcards and Other Tools**

Aside from quizzes and phone apps, there are also flashcards available online, that include games, exercises, and guides on how to create homemade flashcards. Some of the best online flashcards available are:

- StudyBlue
- Quizlet
- StudyStack
- Flashcard Machine

1. **Free Online Classes**

Lastly, there are online courses for learning medical terminology that are available for free. Anybody studying in medical training institutes or schools can still benefit from additional courses. They can add what they've learned from online classes to their knowledge base. Here are a few online programs that can be taken for free:

Medical Terminology Course
Provided by Des Moines University
This online course is divided into sections, and in each one are lessons containing practical and useful examples. Each lesson also includes additional information about topics being discussed, and there are quizzes and exercises at the end. Explanations are provided in an easy and light language and tone, which makes this online course easy to understand.

Medical Terminology
Provided by SweetHaven Publishing Services
This online class presents its lessons using flashcards. The class is divided into different modules that can be studied in a random order. Learners can pick any topic and work from there, which makes this online class perfect for busy medicals students, healthcare workers, and hospital personnel.

Understanding Medical Words
Supported by the National Library of Medicine
This online course can work even without Internet connection. It can be downloaded, so learners can review lessons offline. It offers a comprehensive list of medical terms with explanations and definitions. It also includes abbreviations most commonly used in the medical field. What's more, medical terms are broken down to their Latin and Greek roots. The course also provides examples with accompanying visuals.

These are just a few of many resources that can be added to a learner's arsenal of study tools. Now it's time to go and study.

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Conclusion

Thank you again for downloading this ebook!

I hope this ebook was able to help you to better understand, memorize, and pronounce medical terms. The next step is to use the methods and tips provided here.

Finally, if you enjoyed this ebook, then I'd like to ask you for a favor, would you be kind enough to leave a review for this book on Amazon? It would be greatly appreciated!

Thank you and good luck with your studies!